10 ATTACHMENT 3 - WORK PLANS

10.1 Introduction

10.1.1 Goals and Objectives

10.1.1.1 Proposal Goals and Objectives

The goal of the Kaweah River Basin IRWM Plan proposal is to address the most critical Kaweah River Basin IRWMG issues through the implementation of the most flexible and technically sound projects from member agencies. Further, the Kaweah River Basin IRWMG proposal puts forward projects that collectively generate benefits while also ensuring equitable distribution of benefits to disadvantaged communities. The most important regional goals pursued within the Kaweah River Basin IRWM proposal are (1) the mitigation of groundwater overdraft through the development of new groundwater recharge facilities and wastewater reuse pipeline projects, (2) the investigation of groundwater quality concerns in local disadvantaged communities and the effort to demolish abandoned wells that potentially contribute to water quality concerns, (3) the enhancement of sensitive habitats developed in previous projects, and (4) the development of new floodwater control facilities that benefit rural disadvantaged communities that experience significant flooding in large floodwater events.

Another goal of this proposal is to obtain funding for a group of projects that each fulfill the purposes of the Kaweah River Basin IRWM Plan and are also aligned with DWR's IRWM goals. The group of projects presented in this application will improve the groundwater recharge capabilities in the region, improve the region's ability to reuse available wastewater supplies, increase the reliability of available groundwater supplies through the conservation of surplus wet year surface water supplies, increase the flood control protection of a rural community, expand the historic Oak Savannah habitat in the region and better protect the groundwater quality of domestic water available to disadvantaged communities in Tulare County.

Each project has been submitted to the Kaweah River Basin IRWM Plan selection committee for review and was evaluated and internally scored in an effort to be transparent and allow projects that were supported by the group to move forward in the application process. Each project selected demonstrated that it had significant benefits to the region, had been developed by a local agency, had been identified in other planning documents as an important and necessary project, and that same local agency was willing and able to commit to the necessary cost share associated with the project, including ultimate operation and maintenance costs.

10.1.1.2 IRWM Goals and Objectives

The Kaweah River Basin IRWM group has a "functionally equivalent" IRWM plan, that is made up of several management documents that relate to aspects of the coordinated efforts that make-up the regions working relationships and goals. The Kaweah River Basin IRWM plan goals are to offer efficient and effective groundwater management in an effort to provide a sustainable, high quality supply of groundwater for agricultural, environmental and urban use for the future. However, the primary goal of the existing Kaweah River Basin IRWM Plan is to maintain surface water imports into the regions and to stabilize and then improve groundwater conditions.

10.1.1.3 Statewide IRWM Goals and Objectives

The Kaweah River Basin IRWM grant proposal is also consistent with many of the published Statewide Priorities for the IRWM Grant Program (i.e. Table 1 in the Proposition 84 & 1E IRWM Guidelines). As shown in the Table 10-1 below, nearly every category of priority is benefitted by at least one of the projects included in the Kaweah River Basin IRWM proposal.

Table 10-1: Statewide Priorities for the IRWM Grant Program

Statewide Priorities:	Description:	Projects Consistent with Statewide Priorities:
Drought Preparedness	Proposals that contain projects that effectively address long-term drought preparedness by contributing to sustainable water supply and reliability during water shortages. Drought preparedness projects do not include drought emergency response actions, such as trucking of water or lowering well intakes. Desirable proposals will achieve one or more of the following: Promote water conservation, conjunctive use, reuse and recycling; Improve landscape and agricultural irrigation efficiencies; Achieve long term reduction of water use; Efficient groundwater basin management; or Establish system interties.	Plum Basin; Water Reuse Pipeline; Paregien Basin

Statewide Priorities:	Description:	Projects Consistent with Statewide Priorities:
Use and Reuse Water More Efficiently	Proposals that include projects that implement water use efficiency, water conservation, recycling and reuse to help meet future water demands, increase water supply reliability and adapt to climate change. Desirable proposals include those with projects that: Increase urban and agricultural water use efficiency measures such as conservation and recycling; Capture, store, treat, and use urban storm water runoff (such as percolation to usable aquifers, underground storage beneath parks, small surface basins, domestic storm water capture systems, or the creation of catch basins or sumps downhill of development) or projects outlined in PRC §30916 (SB 790); or Incorporate and implement low impact development (LID) design features, techniques, and practices to reduce or eliminate storm water runoff.	Plum Basin; Water Reuse Pipeline; Paregien Basin

Statewide Priorities:	Description:	Projects Consistent with Statewide Priorities:
Climate Change Response Actions	Water Management actions that will address the key Climate Change issues of: Adaptation to Climate Change; Reduction of Greenhouse Gas (GHG) Emissions; and Reduce Energy Consumption. Proposals that contain projects that when implemented address adaptation to climate change effects in an IRWM region. Desirable proposals include those that: Advance and expand conjunctive management of multiple water supply sources; Use and reuse water more efficiently; Water management system modifications that address anticipated climate change impacts, such as rising sea-level, and which may include modifications or relocations of intakes or outfalls; or Establish migration corridors, re-establish river-floodplain hydrologic continuity, re-introduce anadromous fish populations to upper watersheds, and enhance and protect upper watershed forests and meadow systems. Proposals that contain projects that reduce GHG emissions compared to alternate projects that achieve similar water management contributions toward IRWM objectives. Desirable proposals include those that: Reduce energy consumption of water systems and uses; or Use cleaner energy sources to move and treat water. Proposals that contain projects that reduce not only water demand but wastewater loads as well, and can reduce energy demand and GHG emissions. Desirable proposals include: Water use efficiency, Water recycling, Water system energy efficiency, and Reuse runoff.	Water Reuse Pipeline; Plum Basin; Paregien Basin
Expand Environmental Stewardship	Proposals that contain projects that practice, promote, improve, and expand environmental stewardship to protect and enhance the environment by improving watersheds, floodplains, and instream functions and to sustain water and flood management ecosystems.	Oakes Basin Habitat Enhancement; Paregien Basin; Plum Basin
Practice Integrated Flood Management	Proposals that contain projects that promote and practice integrated flood management to provide multiple benefits including: Better emergency preparedness and response; Improved flood protection; More sustainable flood and water management systems; Enhanced floodplain ecosystems; or LID techniques that store and infiltrate runoff while protecting groundwater.	Paregien Basin; Plum Basin; Oakes Basin Habitat Enhancement

Statewide Priorities:	Description:	Projects Consistent with Statewide Priorities:
Protect Surface Water and Groundwater Quality	Proposals that include: Protecting and restoring surface water and groundwater quality to safeguard public and environmental health and secure water supplies for beneficial uses; or Salt/nutrient management planning as a component of an IRWM Plan.	DAC Groundwater Quality Protection and Investigation
Improve Tribal Water and Natural Resources	Proposals that include the development of Tribal consultation, collaboration, and access to funding for water programs and projects to better sustain Tribal water and natural resources.	N/A
Ensure Equitable Distribution of Benefits	Proposals that: Increase the participation of small and disadvantaged communities in the IRWM process; Develop multi-benefit projects with consideration of affected disadvantaged communities and vulnerable populations; Contain projects that address safe drinking water and wastewater treatment needs of DACs; or Address critical water supply or water quality needs of California Native American Tribes within the region.	DAC Groundwater Quality Protection and Investigation Paregien Basin

10.1.2 Purpose and Need

The purpose of this proposal is to address the following regional needs:

1. The region has been estimated to be approximately 25,000 AF per year in groundwater overdraft and due to recent consecutive years of below normal rainfall, groundwater levels have further declined;
2. The reliability of groundwater resources needs to be improved both for agricultural users and domestic users (including those in several rural disadvantaged communities) as all users in this region depend on groundwater during times of drought;
3. There are insufficient groundwater recharge facilities to effectively manage and conserve the available wet year surface water;
4. There are insufficient flood control facilities within the region to adequately protect some rural disadvantaged communities;
5. The groundwater quality available to some disadvantaged communities within the region does not meet all current state standards for domestic drinking supplies and they either require treatment projects to address contaminants or development of alternative sources; and

6. There are historic habitats in the region that have severely limited due to agricultural development and need to be restored to a viable and sustainable state.

Table 10-2: Kaweah River Basin IRWM Needs, Plan Goals and How this Proposal will Address Them

Kaweah River Basin Regional Need:	Kaweah River Basin IRWM Plan Goal:	How the Proposal will address this Need/Plan Goal:
Estimated existing groundwater overdraft of 25,000 acre-feet per year with likely increases due to lack of State Water Project deliveries to Tulare Lakebed farming interests	1 Stabilize and potentially reverse the long-term decline of groundwater levels. Accomplishing this will provide a balancing between groundwater demand and supply, ensuring a resource that will be available into the future.	Improved groundwater recharge capacity through Plum and Paregien Basin projects.
	2 Maintain and augment surface water supplies that directly affect groundwater levels. Accomplishing this will reduce expected impacts of increased demands on groundwater supplies, which is critical in maintaining the ability to stabilize long-term draw down.	Capture additional wet year water supplies for groundwater recharge through Plum and Paregien Basin Projects. Develop new tertiary treated wastewater supply through Water Reuse Pipeline Project.
	3 Evaluate groundwater replenishment projects. Accomplishing this will focus efforts on providing greater recharge productivity, which will make the most efficient and effective use of facilities and resources.	Plum and Paregien Basin projects were evaluated and because they are feasible, effective and productive they are being pursued and implemented.
	4 Evaluate cooperative management projects. Accomplishing this will provide for greater recharge opportunities, which is important in attaining the stabilization of groundwater levels.	Plum Basin, Water Reuse Pipeline and GW Quality Protection and Investigation projects were evaluated and because they are feasible, effective and productive they are being pursued and implemented.

Kaweah River Basin Regional Need:	Kaweah River Basin IRWM Plan Goal:	How the Proposal will address this Need/Plan Goal:
	5 Provide effective and efficient management of groundwater recharge projects, facilities and programs. Accomplishing this will increase recharge in the efforts to stabilize groundwater levels.	Oakes Basin Habitat Enhancement project will address a management need at this recharge project being the restoration of a historic habitat.
	6 Coordinate groundwater basin management with local agencies with groundwater authority within the Plan Area. Accomplishing this will promote a consistency in objectives between local agencies, providing a unified approach to meeting goals.	All of the projects in this Proposal were shared with the Kaweah River Basin IRWM selection committee members and were regularly reported on during normal IRWM meetings.
	7 Monitor inelastic land surface subsidence resulting from groundwater pumping. Accomplishing this will help in determining available groundwater storage and evaluating groundwater supplies and assessing potential impacts to the region's surface water delivery systems.	N/A
Maintain high quality groundwater resources as this supply is a vitally important supply for the region	1 Monitor groundwater quality. Accomplishing this will enable the Plan to assess possible impacts that might diminish the usability of the resource.	GW Quality Protection and Investigation Project will investigate GW quality in existing domestic wells and share the information with the IRWM group.
	2 Monitor changes to surface water quality that directly affect groundwater quality. Accomplishing this will enable the Plan to assess possible impacts that might diminish the usability of the resource.	GW Quality Protection and Investigation Project will investigate GW quality and destroy 100 abandoned wells in local DACs.

10.1.3 Project List

Table 10-3: Projects Submitted in the Kaweah River Basin IRWM Grant Proposal

Project Name:	Percent completion of Design:	Implementing Agencies:
Plum Basin	100	Tulare ID, City of Tulare
Water Reuse Pipeline	60	City of Visalia, Tulare ID
Paregien Basin	10	Kaweah Delta WCD
Oakes Basin	90	City of Visalia, Kaweah Delta WCD
Disadvantaged Coomunities Groundwater Quality Protection and Investigation	--	County of Tulare

PLUM BASIN PROJECT – The Plum Basin Project is a three phase effort put forward as a groundwater banking partnership between Tulare Irrigation District and the City of Tulare. The project involves the development of a new 142 acre groundwater recharge basin within Tulare ID, to the northeast of the City of Tulare. The location of the facility makes groundwater recharge through it beneficial to the City of Tulare's groundwater extraction wells (their only domestic water supply). Surplus surface water from Tulare ID's available water rights and contracts are scheduled and recharged in the facility. The two entities fund this project through a cost sharing agreement established prior to the beginning of the project. This project generates benefits through addressing regional groundwater overdraft, providing regional water conservation for both partners, providing drought preparedness for the City of Tulare, and expands the conjunctive management of multiple water supply sources. Also this project is consistent with the Tulare Lake Basin Plan through the reduction of groundwater overdraft and the betterment of groundwater quality.

In 2008 Tulare ID pursued the design, development of construction plans, and CEQA documentation for the project. In 2009 - 2010, the project was selected for $600,000 of grant funding through two separate grant applications to the Bureau of Reclamation. The first cell and water control structures for the project are currently under construction by Tulare ID forces.

WATER REUSE PIPELINE PROJECT – The Water Reuse Pipeline Project is put forward as a wastewater reuse partnership between the City of Visalia and Tulare ID.

The City of Visalia has recently committed to upgrade and modify its existing wastewater treatment plant from secondary treatment to a new tertiary treatment facility. With this upgrade, the recycled wastewater from the facility will become a useful irrigation supply that Tulare ID is interested in putting to beneficial use. The Water Reuse Pipeline Project will construct a new 2.25 mile large diameter reinforced concrete conveyance pipeline from the southern part of the City of Visalia's pipeline system into Tulare ID's service area so that water can be delivered through the Tulare ID's surface water delivery system. In exchange for this surface water supply the City will receive other Tulare ID surface water in wet years so that these waters can be recharged in locations that are advantageous to the City of Visalia (far to the east of the wastewater treatment plant). This project generates benefits through addressing regional groundwater overdraft, increasing groundwater reliability, providing regional water conservation, increasing drought preparedness, and expands the conjunctive management of multiple water supply sources. The upgrade to the City's wastewater treatment plan and the distribution systems for the treated wastewater combine for an investment of approximately $100 Million. Also this project is consistent with the Tulare Lake Basin Plan through the reduction of groundwater overdraft, accomplishing wastewater reclamation and the reduction of discharges to navigable waters.

In 2009 the City of Visalia began to pursue the design and the development of construction plans for the project. Currently, project plans are developed to a 60% complete stage, construction bid documents and specifications are being developed, and CEQA and NEPA documentation is being pursued with an anticipated completion date in the spring of 2011. In the summer of 2010, this project was selected for $700,000 of federal grant funding through a grant application by Tulare ID to the Bureau of Reclamation. Project is anticipated to begin construction in the fall of 2011 and continue until the spring of 2012.

PAREGIEN BASIN PROJECT – The Paregien Basin Project is put forward as a floodwater control and groundwater recharge project by Kaweah Delta WCD. Deep Creek is a natural channel that runs through the City of Farmersville, a disadvantaged community, in Tulare County. Kaweah Delta WCD has pursued a groundwater recharge basin location along Deep Creek due to its excellent groundwater recharge capabilities and the potential environmental benefits that a water impoundment facility would have in this area for migrating water fowl and raptors. The City of Farmersville has experienced significant flooding and damage from overland flooding due to the limited capacity of the Deep Creek through the City. The location of the Paregien Basin Project, being upstream of the City of Farmersville, will allow damaging flows above the capacity of the Deep Creek channel to be regulated within the developed basin to

reduce flood damage within the City of Farmersville. Release of water to the channel will occur after the passage of the impacting rainfall event. Also this project is consistent with the Tulare Lake Basin Plan through the reduction of groundwater overdraft and the betterment of groundwater quality.

This Project consists of a 78-acre groundwater recharge basin, associated structures and monitoring wells. The proposed basin area is currently in an established native oak savannah habitat which is to be preserved and enhanced. The construction of a downstream concrete control structure and earthen wing walls is proposed. The structure will allow for the impoundment of water on the site for both groundwater recharge purposes and for temporary upstream diversion/impoundment of surface water to allow for enhanced storm water control for the City of Farmersville.

The project has been in development since 2001 and has made limited progress due to available financial resources. Currently, project plans are developed to a 10% complete stage (conceptual plans). Recently more accurate survey information and soil logs have been completed for the project. Construction bid documents and specifications, CEQA documentation, State and Federal permitting for construction within a natural channel, and finalized design plans need to be generated. This project generates benefits through developing additional flood water protection for a disadvantaged community, addressing regional groundwater overdraft, providing regional water conservation and increases drought preparedness for the City of Farmersville.

OAKES BASIN HABITAT ENHANCEMENT PROJECT – Oakes Basin was a project that Kaweah Delta WCD constructed in 2007. The Kaweah Delta WCD constructed the first phase of this project which was a groundwater recharge basin and storm water layoff site and laid the groundwork for the second phase of the project which was an environmental stewardship project of habitat development. The 42-acre Oakes Basin Demonstration Project site is located within the historic Kaweah River Delta. In the mid 1800's the Kaweah River Delta supported the largest stand of valley oak (*Quercus lobata*) riparian forest in the world (McClaron 1983). The vast majority of this habitat type has since been eliminated as a result of conversion to agriculture. A significant component of the Oakes Basin Restoration Project includes the restoration of Valley Oak Savannah. Also this project is consistent with the Tulare Lake Basin Plan through the implementation of watershed management activities by local agencies.

After construction, native vegetation began to develop on the upper slope of the earthen basin banks. This has been allowed to continue and encouraged. However, without a regular source of irrigation this vegetation will remain as annual grasses and small trees

and will not develop into a sustainable habitat for local raptor, rodent and vegetation species. The Oakes Basin Habitat Enhancement Project will involve the construction and development of a small groundwater well and irrigation system for the habitat under development at Oakes Basin. The Kaweah Delta WCD, in partnership with City of Visalia, has put forward this project, as a furtherance of Kaweah Delta WCD's study of Habitat Development at the site.

GROUNDWATER QUALITY PROTECTION AND INVESTIGATION PROJECT – Groundwater contamination is a pervasive problem particularly impacting critical water supplies for disadvantaged communities in the regional area. Almost exclusively dependent on groundwater for drinking water supplies, many community water systems and private household wells struggle to provide safe potable water to their consumers. To address this problem, the proposed Groundwater Quality Protection and Investigation Project will undertake a three-phase approach: (1) Eliminating pathways for contamination in vulnerable areas; (2) developing solutions for those areas; and (3) planning for improvement in water quality delivery. This project integrates a number of different water management strategies (source water protection, education, data collection, and development of engineered solutions) to address groundwater supply and quality challenges in the region. The project was developed through collaboration with multiple stakeholders, including organizations focused on disadvantaged communities and County government. In addition to engineered solutions, this project will also utilize engagement with disadvantaged community residents and nearby landowners to develop solutions to address the region's water quality challenges. Also this project is consistent with the Tulare Lake Basin Plan through the protection of groundwater quality, the furtherance of protective well standards and the identification of water quality concerns throughout the region.

This project addresses critical water supplies for disadvantaged communities, environmental justice, and water quality challenges in the region, all of which are priorities for the Kaweah River Basin IRWM Plan. Additionally, the project is scalable, so with additional funding it will be able to help more vulnerable communities and eliminate more contamination sources, but can still be effective in key areas with a reduced budget. A waiver of cost share is requested for this effort.

10.1.4 Integrated Elements of Projects

- Integration between projects is not necessary for individual project success. However, when combined, these projects due provide greater overall benefits to the IRWM area. Goals such as, increased groundwater recharge, reduction in

groundwater overdraft, and flood control, will occur in greater quantities with all projects implemented. Below is a list of how these projects provide benefits when integrated.

- The basin and reuse projects are timely in that SJR Restoration flows will be moving from interim flows to full restoration flows in the near future. When this happens districts will have to acquire additional wet year waters to make themselves whole given the surface water resources that were reallocated.
- The Water Reuse Pipeline and Plum Basin Project have linked the two largest communities in the County with the two largest water management districts in the IRWM area through efforts to develop conservation and reuse projects that are have improved capabilities through the partnerships.
    - Plum Basins Cost sharing agreement;
    - Water Reuse Pipeline negotiated water exchange agreement and joint funding.
- Basin projects link together to develop forested corridors for avian species. These basin projects will all also help groundwater quality in the Basin as high quality surface water from the St. Johns and Kaweah Rivers and the San Joaquin River are recharged through the facilities.
- Oakes Basin Habitat Enhancement Project is being done in connection with the Water Reuse Pipeline Project to address the removal walnut orchards along the construction area for the pipeline alignment. This is an environmental mitigation project that will develop a protected Oak Savannah habitat along the perimeter of the existing Oakes Basin within the Kaweah River Delta corridor.
- Oakes Basin Habitat Enhancement Project follows the development of Habitat Conservation Planning completed for the site in conjunction with a local environmental non-profit group (Sequoia Riverlands Trust), the Kaweah Delta WCD Corridor Studies and the City of Visalia for environmental stewardship projects in the region.
- The Groundwater Quality Protection and Investigation Project will be accomplished as another effort by Tulare County focusing on water supply sustainability issues, regional solutions and projects for disadvantaged communities. This project will implement safe destruction of abandoned groundwater wells in disadvantaged communities that currently pose a significant risk of contamination to regional groundwater resources. As information is developed in the other Tulare County study, it may prove supplemental to this effort as well.

10.1.5 Regional Map

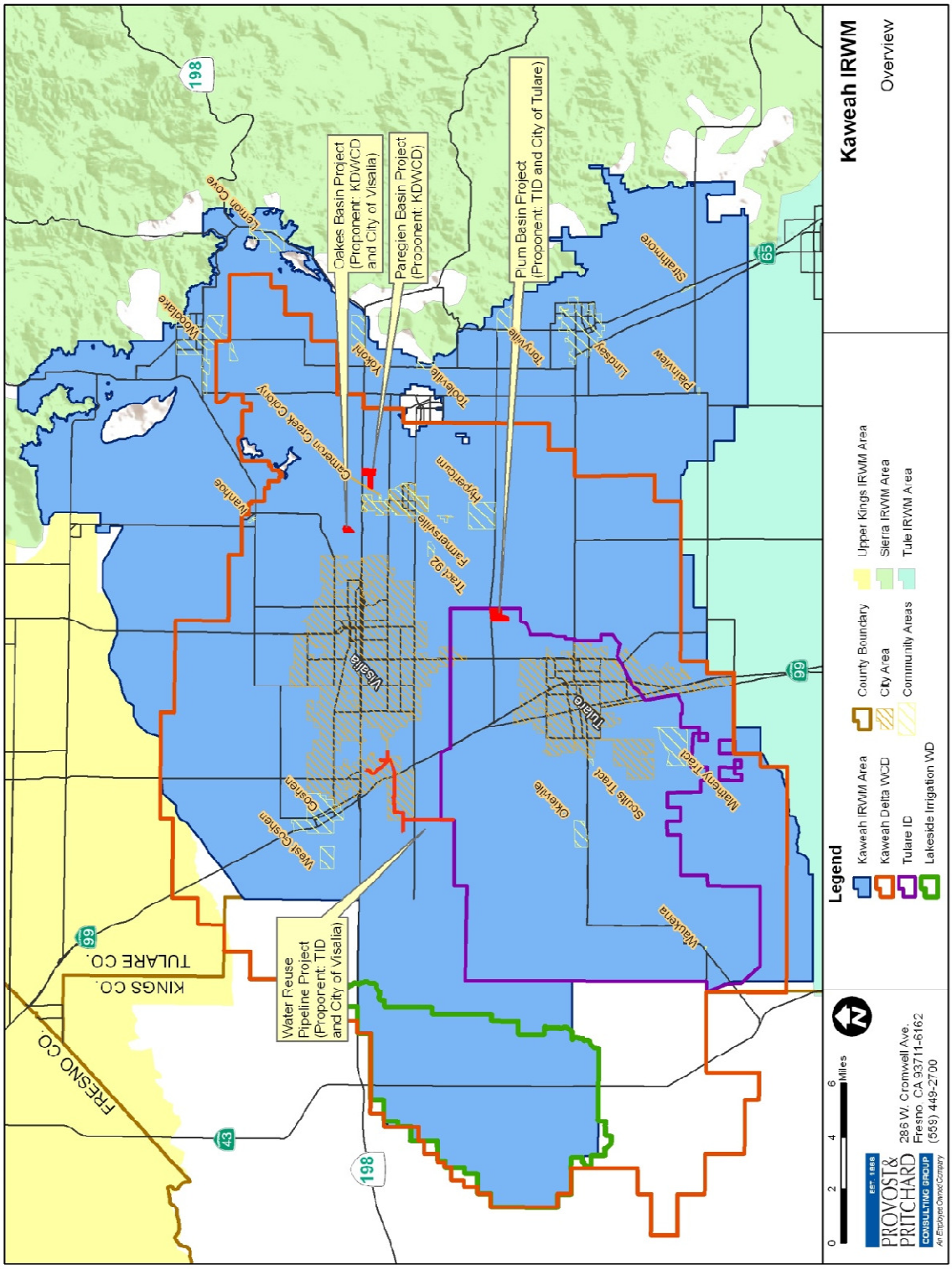

Figure 10.1.5-1 - Overview

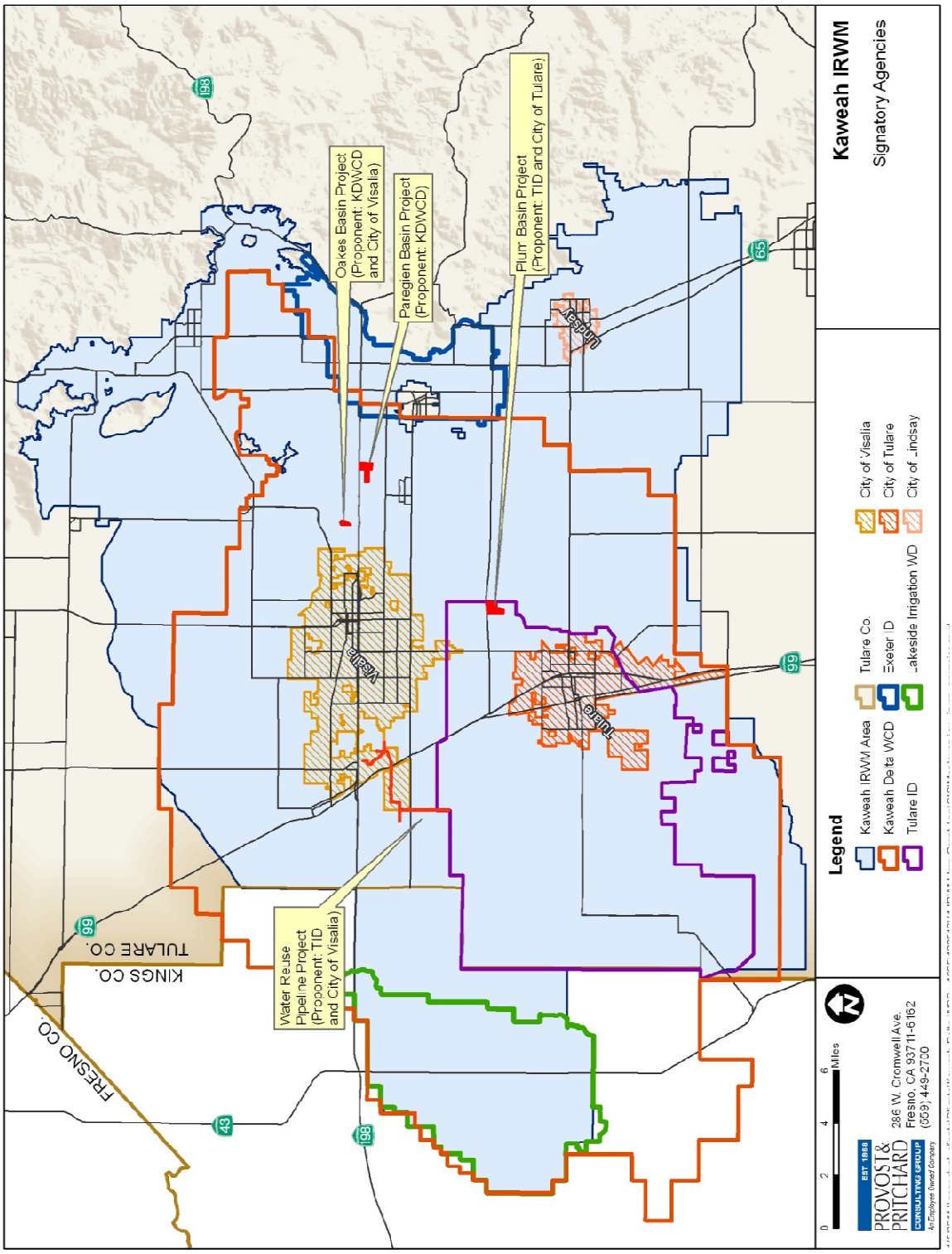

Figure 10.1.5-2 – Signatory Agencies

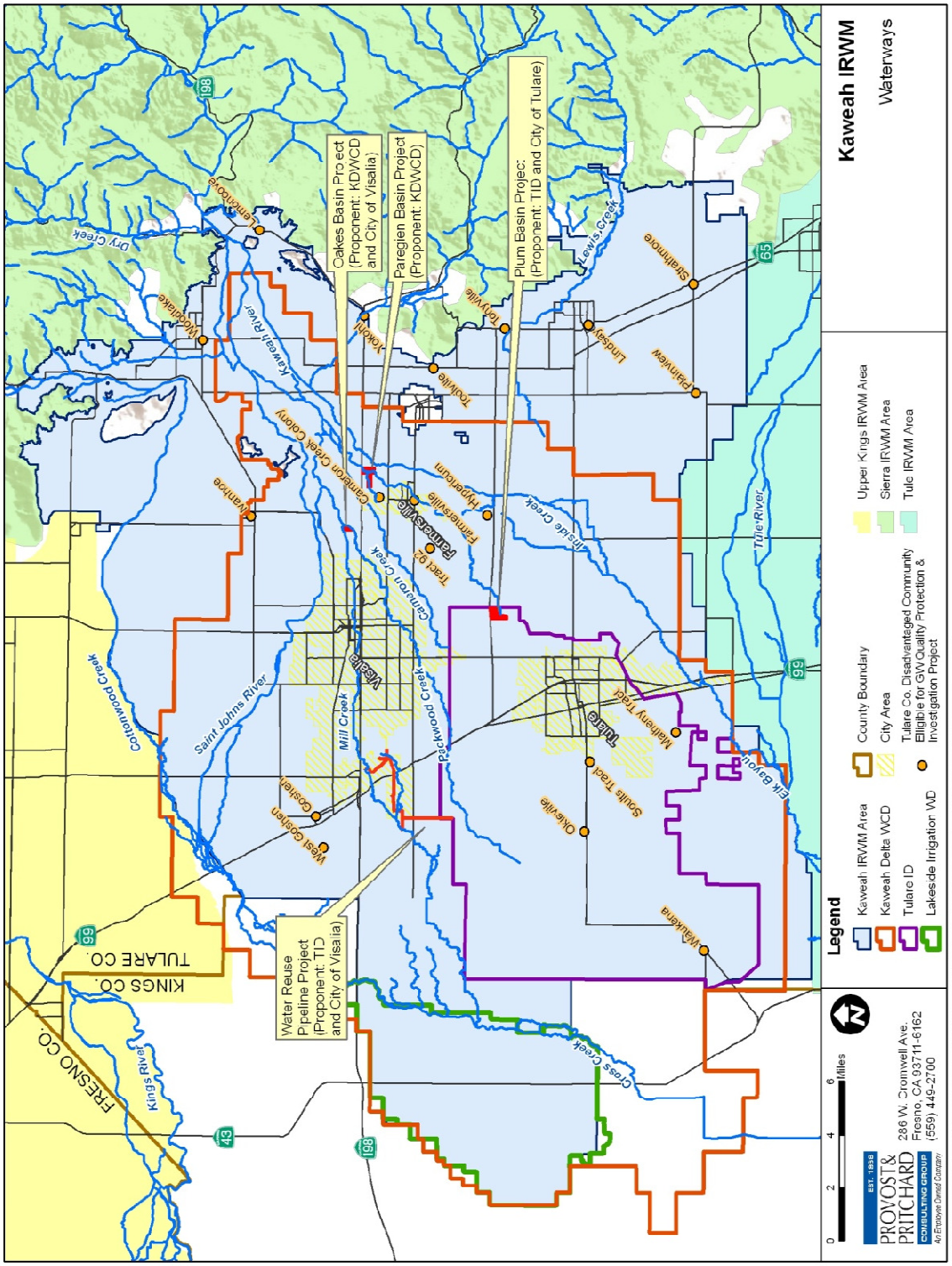

Figure 10.1.5-3 –Kaweah River Basin Waterways

10.1.6 Completed Work

PLUM BASIN PROJECT – This basin project is immediately south of the District's existing Creamline Basins which have excellent long-term recharge rates. The City of Tulare and Tulare ID jointly purchased the project lands in 2007. In 2008 Tulare ID pursued the design, development of construction plans, and CEQA documentation for the project. Tulare ID contracted with a local geotechnical firm for a report that analyzed soil borings on the property and evaluated the recharge potential of the proposed facility[3]. This report showed significant recharge potential and identified some potential design and construction issues. Since the Plum Basin proved to be the Tulare IDs' best project alternative, Tulare ID pursued a project design with a local civil engineering consultant. Final construction plans were developed with the intent that Tulare ID forces would construct the vast majority of project facilities with only a few small items of the project contracted out to specialized service providers.

Tulare ID as lead agency found through development of a Mitigated Negative Declaration in 2008 that the development and implementation of this project did not have significant environmental impacts and that standard Tulare ID construction protections would be sufficient to protect the environment from any adverse impacts[4]. In 2009[5] - 2010[6], the project was selected for $600,000 of grant funding through two separate grant applications to the Bureau of Reclamation. After the project was selected for federal grant funding, NEPA compliance was pursued through the generation of an Environmental Assessment[7] and Finding of No Significant Impact[8] (EA-FONSI). Associated with this effort, a cultural resources investigation[9] was pursued through a local registered archeologist who certified in her report that the proposed

[3] Permeability Characterization Report for Plum Property, BSK Associates, January 2008.
[4] Tulare ID Mitigated Negative Declaration for Plum Basin Project
[5] Tulare Irrigation District Phase One of the Plum Basin Project, grant application to the Bureau of Reclamation for a Water for America Challenge Grant, 2009.
[6] Tulare Irrigation District Phases Two and Three of the Plum Basin Project, grant application to the Bureau of Reclamation for a WaterSMART Water and Energy Efficiency Grant, 2010.
[7] Tulare Irrigation District plum Basin Project – Phase 1, Final Environmental Assessment, EA-09-77, U.S. Department of the Interior, Bureau of Reclamation, Mid Pacific Region, South-Central California Area Office, Fresno, California, June 2010.
[8] Tulare Irrigation District plum Basin Project – Phase 1, Finding of No Significant Impact, FONSI-09-77, U.S. Department of the Interior, Bureau of Reclamation, Mid Pacific Region, South-Central California Area Office, Fresno, California, June 2010.
[9] A Cultural Resources Assessment for the Tulare Irrigation District Plum Basin Project near Tulare in Tulare County, California, RSO Consulting, January 2010.

project would not impact local cultural resources. A Stormwater Pollution Prevention Plan and a Dust Control Plan were both developed for the project by Tulare ID staff.

The earthen cell for Phase One and the water control structures for all phases of the project are currently under construction by Tulare ID forces. Construction of Phase One facilities are anticipated to be completed prior to the grant award in June 2011.

WATER REUSE PIPELINE PROJECT –The City of Visalia began pursuing the concept of developing a tertiary wastewater treatment plan with a reuse delivery system several years ago because the City was committed to increasing water supplies through recycled wastewater and they believed that future regulations would eventually lead toward this requirement. In 2008 the City of Visalia accepted a waste water master plan document[10] focusing on the effort to transform their current wastewater treatment plant currently capable of secondary treatment into a facility capable of tertiary treatment and the reuse of the treated water. In 2009 the City of Visalia contracted for the development of environmental compliance documents as well as design and the development of construction plans for the wastewater treatment plant project. In February 2010 a technical memorandum[11] on the preferred alignment of the water reuse pipeline project was accomplished and accepted by the City of Visalia. In the summer of 2010, this project was selected for $700,000 of federal grant funding through a grant application by Tulare ID to the Bureau of Reclamation[12].

Currently, project (water reuse pipeline project) plans are developed to a 60% complete stage, construction bid documents and specifications are being developed, as well as CEQA (planned to be prepared as an Environmental Impact Report) and NEPA (planned to be prepared as an Environmental Assessment//Finding of No Significant Impact) documentation. The Initial Study/ Notice of Preparation for CEQA compliance was circulated for 30 day public review beginning August 18, 2010. The Draft EIR is currently being prepared for public circulation. It is anticipated that the Draft EIR will be circulated for the 45 day public review at the end of January 2011. It is anticipated that the Final EIR will be adopted by the City in June/July 2011. Project construction is

[10] Visalia Water Conservation Plant, 2008 Master Plan, Moving toward a sustainable wastewater reuse program for the community of Visalia, California, Carollo Engineers.
[11] Preliminary Design Concepts and Approach for Completion of Offsite Pipeline Design for the Water Conservation Plan Upgrade Project, Provost and Pritchard Consulting Group, February 2010.
[12] Water Conservation and Reuse Pipeline Project, Tulare County, CA, an application submitted to the US Bureau of Reclamation for a WaterSMART Water and Energy Efficiency Grant for Fiscal Year 2010, Tulare ID, April 2010.

anticipated to begin construction in the fall or winter of 2011 and continue until the spring or summer of 2012.

PAREGIEN BASIN PROJECT – The project has been in development since 2000 and has made only minimal progress due to other financial priorities for the Kaweah Delta WCD. Kaweah Delta WCD acquired the project property in 2001. Since that time, this project was included in an unsuccessful 2005 grant application to DWR for Proposition 50 Implementation funds[13]. The project has been listed as a priority for Kaweah Delta WCD and discussed in the groundwater management plan annual reports. Currently, project plans are developed to a 10% complete stage (conceptual plans). Recently supplemental topographic survey information and soil borings and logs have been acquired for the project. Ground surface contours were generated for the project site and overlaid onto an aerial photo to develop the basis of project design plans. As part of this application, an estimate of probable construction cost was developed, the functional storage of the basin was quantified, and flood control benefits were quantified. Facility design, construction plans, specifications, construction bid documents, CEQA documentation (planned to be prepared as a Mitigated Negative Declaration), State and Federal permitting for construction within a natural channel, and finalized design plans still need to be generated for the project.

OAKES BASIN HABITAT ENHANCEMENT PROJECT – The Oakes Basin is a cooperative project between Kaweah Delta WCD and the City of Visalia that has been in development since the mid-1990s. In 1999 a technical memorandum on the basis of design for the Oakes Basin project was developed by a consultant to Kaweah Delta WCD[14]. This document analyzed the design issues associated with the development of the project, compared possible methods of overcoming these issues, estimated costs for each and recommended design parameters based on the most affective and least costly alternatives. Included in this document was a basis of design for portions of the project that were to be re-vegetated[15]. This was soon followed by another report containing recommended plants and technical specifications for the habitat restoration

[13] PIN# 6766 – Regional Water Management Implementation Program 2005-2006, an application for an Integrated Regional Water management Implementation Step 1 Grant, Kaweah Delta WCD, July 2005.
[14] KDWCD Oakes Basin Demonstration Project, Technical Memorandum No. 2 – Basis of Design, Camp Dresser & McKee, Inc, April 1999.
[15] Oakes Basin Demonstration Project, Technical Memorandum – Basis of Design, Riparian Habitat Restoration Sections, H.T. Harvey and Associates, April 1999.

portion of the project[16]. The construction of the basin facilities was viewed as the first phase of the project, and then would be followed by the habitat restoration in the second phase.

The project was included in an unsuccessful 2005 grant application to DWR for Proposition 50 Implementation funds[17]. A mitigated negative declaration was adopted by Kaweah Delta WCD in 2005 for the construction and operation of the Oakes Basin project, which included the implementation of a Savannah Oak vegetation plan. Construction plans and specifications for the construction of the earthen basin were developed by the Kaweah Delta WCD's engineering consultant in 2006. The earthen basin was constructed that same year. Kaweah Delta WCD also added some small concrete connecting structures to make the basin operational at that time. However, after this was accomplished a reliable water source for the vegetation plan could not be developed. For this reason, the Oakes Basin Habitat Enhancement Project is being put forward to develop a new irrigation well, a new drip irrigation system for the facility, and to accomplish the vegetation plan as envisioned in the previous studies.

GROUNDWATER QUALITY PROTECTION AND INVESTIGATION PROJECT – Groundwater quality issues have been suggested and investigated throughout Tulare County for some time. Many of the disadvantaged communities and community services districts within Tulare County have struggled with poor water quality issues for more than a decade with varying success and progress. Recently Tulare County was awarded a Proposition 84 grant in the amount of $2 Million to study and develop a plan for regional solutions that address disadvantaged community water supply and quality issues in the Tulare Lake Basin portion of Kings, Fresno, Tulare and Kern Counties. This grant award has been in place since 2008, but has not yet been funded so that the investigation can begin. Funding is expected in early 2011, as a final grant contract has been signed by the County and is awaiting final processing by DWR. Recently Tulare County concluded its process to solicit qualifications from local consultants interested in pursuing the effort for Tulare County, and has selected a project team which includes two non-profit organizations that are partners for this groundwater project (Self Help Enterprises and Community Water Center). The effort involved in the $2 Million study is not intended to accomplish any construction activities, but rather to study water supply

[16] Oakes Basin Demonstration Project, Riparian Habitat Restoration Draft – Plans and Technical Specifications, H.T. Harvey and Associates, August 1999.
[17] PIN# 6766 – Regional Water Management Implementation Program 2005-2006, an application for an Integrated Regional Water management Implementation Step 1 Grant, Kaweah Delta WCD, July 2005.

and water quality issues for disadvantaged communities within the southern San Joaquin Valley. As such, this larger regional study will help provide additional data and support for this Kaweah River Basin IRWM grant proposal groundwater quality project.

Tulare County has developed maps outlining known water quality data and disadvantaged communities. Tulare County has also begun developing a water quality database through the initial phase of an AB 303 grant (CGH grant). This data, along with the database that the County is building on disadvantaged community water and wastewater needs will be used to target outreach for well abandonment and well testing, as well as technical assistance (including feasibility studies and preliminary engineering) for participation in this groundwater project.

Already the Tulare County Dept. of Environmental Health has identified over 100 wells in Tract 92 (a disadvantaged community) alone that need proper abandonment but lack funding by the owners to complete the process. Additionally, Tulare County has a backlog of at least 50 private wells that are waiting proper abandonment before county approval for new wells or conditional use permits can move forward. Therefore, given the increased focus on the water quality of disadvantaged communities within Tulare County, and the current backlog, the Tulare County's Department of Environmental Health believes that abandoned wells in disadvantaged community areas are not being abandoned properly because of a lack of available financial resources and that Tulare County's financial penalty for non-compliance are not able to help the underlying issue in these areas. In an effort to benefit the region's groundwater resources, Tulare County developed the Groundwater Quality Protection and Investigation Project application in cooperation with local community groups focused on benefiting local disadvantaged communities. The project focuses on working with the public to identify wells that need to be destroyed through a process that is not punitive and which the County will contract for the destruction of the identified wells if the applicant's financial means are below an identified threshold. As part of the project application, Tulare County has developed the work plan, budget, and schedule for the project. Further, Tulare County Department of Environmental Health has determined that this project will not require CEQA documentation as all activities fall into defined statutory exemptions.

10.1.7 Existing Data and Studies

PLUM BASIN PROJECT –

- Cost share agreement with City of Tulare and pursuit of recharge project (MOU);
- MOU between project partners for Plum Basin;
- Soil boring information and percolation rates (geotech report);

- Topographic survey of project area;
- Alternatives considered during design;
- 2009 – 2010 Challenge and 2009 ARRA grant applications;
- SOR Grant application and possibility of expanding groundwater banking;
- Record of Survey on the Property;
- Final design of construction facilities;
- Engineers Estimate of Probable Construction Costs;
- Staging Plan for removal of existing trees from Project site;
- Cultural resources investigation on project site;
- Mitigated Negative Declaration in compliance with CEQA;
- Environmental Assessment and Finding of No Significant Impact for NEPA compliance;
- Dust Control Plan for Air Resources Board;
- SWPPP for Regional Water Quality Control Board;
- Project listed in TULARE ID GWMP (Items 17 and 18 of Attachment 14 – Implementation Schedule).

WATER REUSE PIPELINE PROJECT –

- 2008 waste water master plans for the City of Visalia;
- Carrollo Executive Summary for Wastewater Conservation Plant;
- Geotechnical Investigation for the Water Conservation Plant and Water Reuse Pipeline projects;
- John Dutton's Technical memorandum on selection of the preferred alternative for the Water Reuse Pipeline project;
- Preliminary 60% design of Water Reuse Pipeline project ;
- Draft Water Exchange arrangement//agreement with Tulare ID;
- Tulare ID 2010 Challenge Grant application for Water Reuse Pipeline project;
- Project listed as a priority in Tulare ID's 2010 Groundwater Management Plan update (Items 4 of Attachment 14 – Implementation Schedule);

PAREGIEN BASIN PROJECT –

- AB303 Grant application from 2005;
- Mentioned Annual Groundwater Management Reports;
- Preliminary Design of in-channel structure and earthen levees;
- Topographic survey of basin area;
- Soil borings and Geotechnical Investigation for project site;

OAKES BASIN HABITAT ENHANCEMENT PROJECT –

- Project Cost Sharing agreement with the City of Visalia;
- Construction of Phase One of Oakes Groundwater Recharge and Stormwater Lay-off Basin;
- 2007 Phase One Technical Memorandum concerning Oakes Basin to the City of Visalia's Stormwater Masterplan Update;
- Oakes Basins Corridor Study by Kaweah Delta WCD;
- Oakes Basins Demonstration Project, Technical Memorandum – Basis of Design, Riparian Habitat Restoration Sections prepared by H. T. Harvey and Associates in April1999; and
- Kaweah Delta WCD Habitat Conservation Plan/ Natural Communities Conservation Planning for the project. Following the initiation of the 1993 Kaweah River Delta Corridor Enhancement Study that investigated the feasibility of managing surface and storm waters for the benefit of the region's groundwater and biological resources, Kaweah Delta WCD pursued the development of a Habitat Conservation Plan (HCP). A HCP comprehensively addresses the long-term habitat and species impacts beyond what would normally be handled on a project-by-project basis, allowing for comprehensive management of the water needs of the area. Currently, the Kaweah Delta WCD has received approval of the Plan of Study. The Plan of Study is divided into three phases: a) Project Development, b) HCP Development, and c) environmental analysis and review. The Project Development Phase includes those efforts needed to fully develop the scope and nature of the HCP, as well as integration of State of California, Endangered Species Act requirements. The HCP Development Phase will take elements from the Plan of Study and the Project Development Phase to form the content of the HCP document and the basis for a Section 10(a) Incidental Take Permit and associated State action. The final phase will develop appropriate environmental documentation in satisfaction of NEPA and CEQA guidelines for the covered actions within the proposed HCP.

GROUNDWATER QUALITY PROTECTION AND INVESTIGATION PROJECT –

- Tulare County has existing GIS data from existing public water systems which identifies areas of groundwater contamination.
    - Maps overlaying known water quality data and disadvantaged community boundaries.
    - Tulare County has also begun to develop a water quality database through the initial phase of an AB 303 grant.

  - The County is developing a database of disadvantaged community water and wastewater needs.
- Tulare County has records of some existing disused wells which are in need of destruction.
- Existing Tulare County ordinance requiring and describing the destruction of disused wells.

10.1.8 Project Maps

Figure 10.1.8-1 – Plum Basin Project

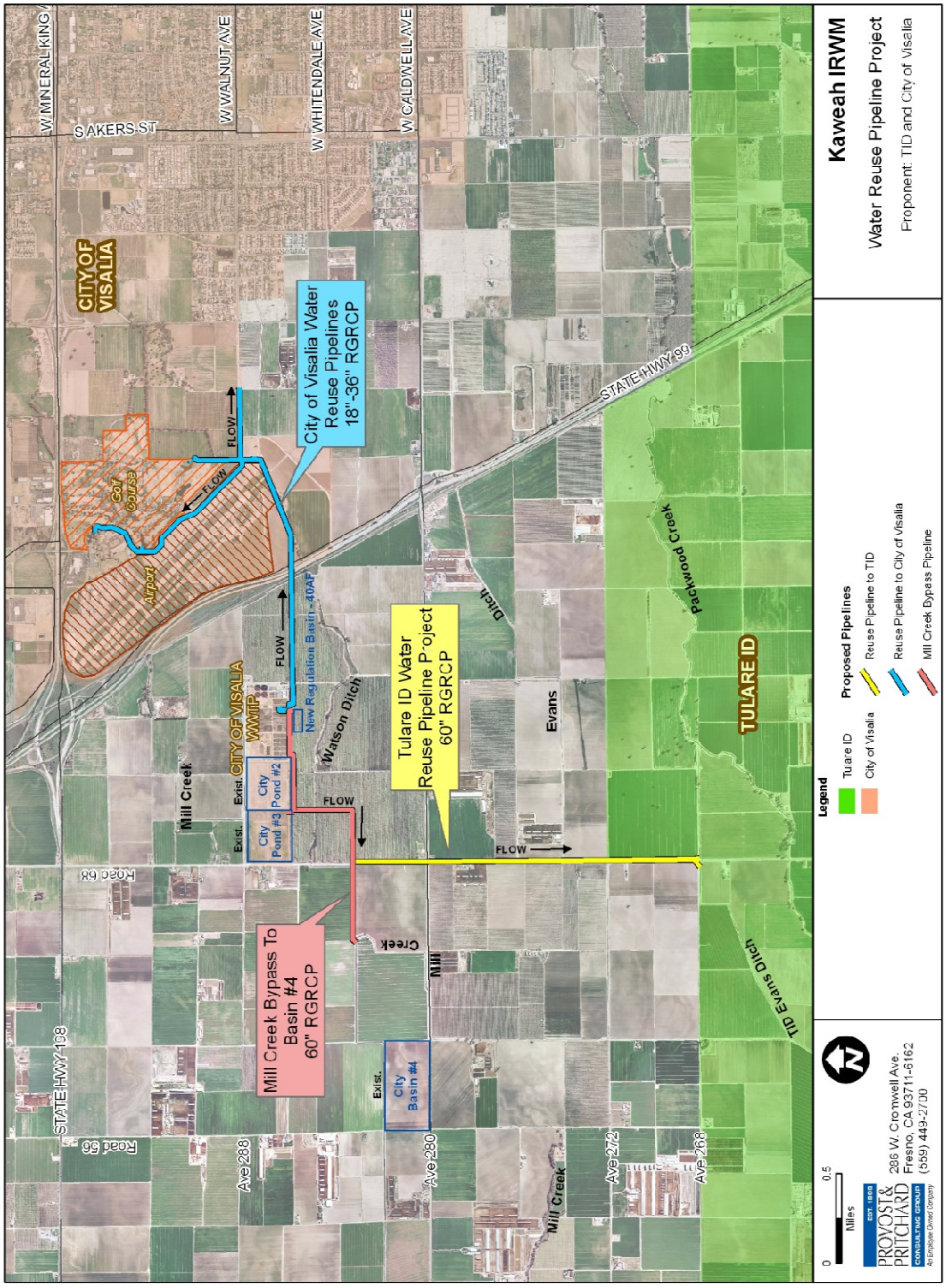

Figure 10.1.8-2 – Water Reuse Pipeline Project

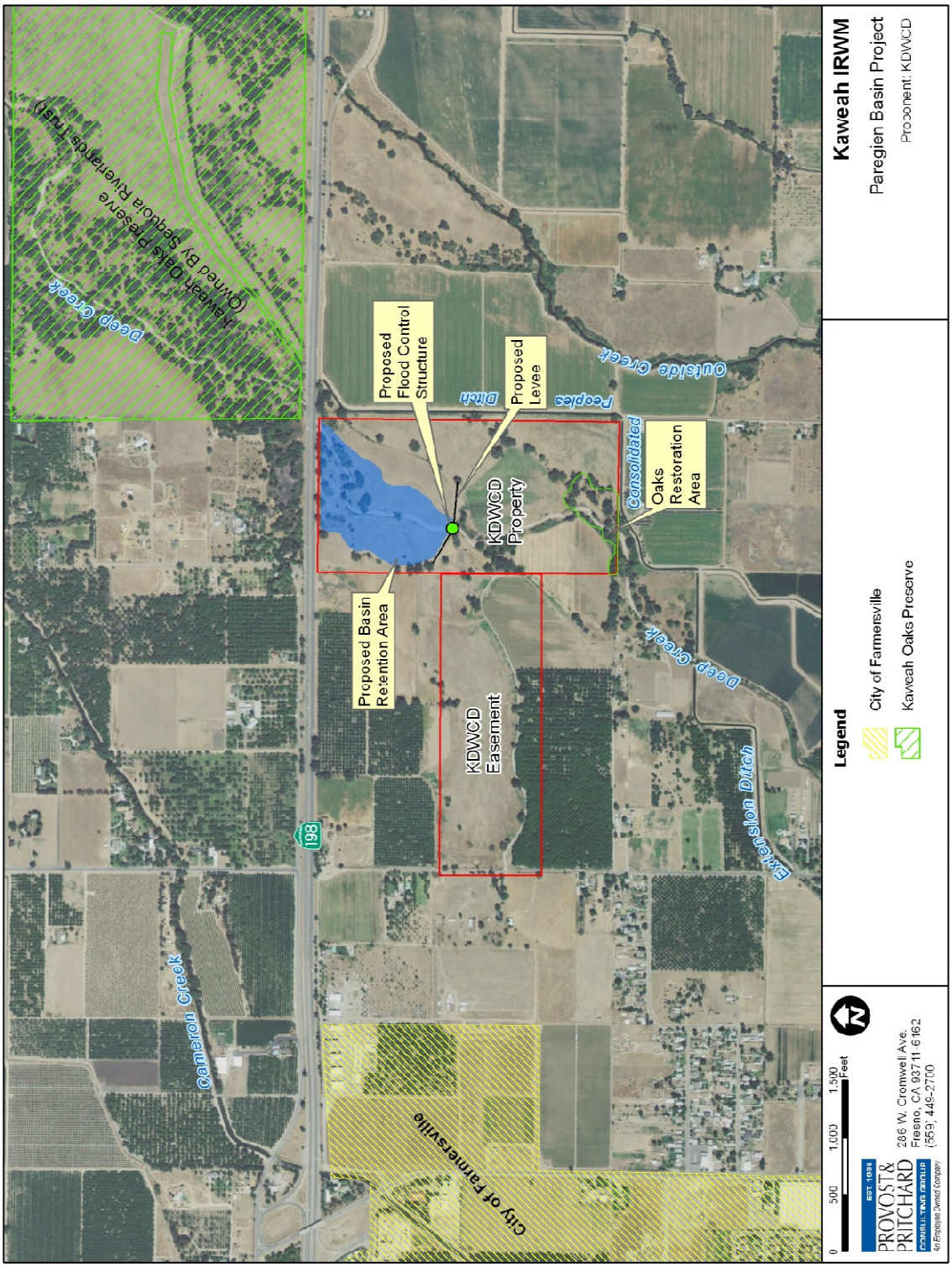

Figure 10.1.8-3 – Paregien Basin Project

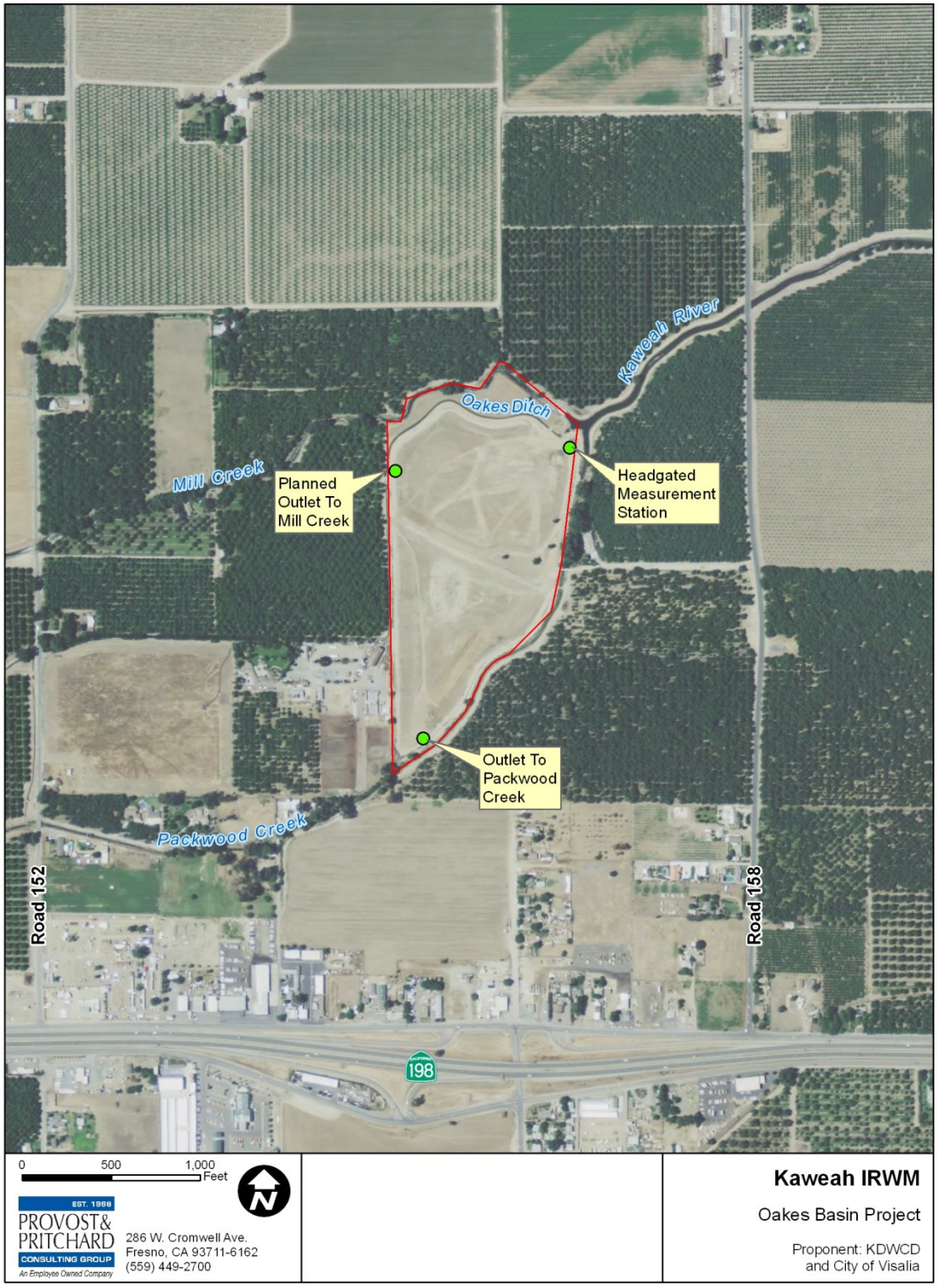

Figure 10.1.8-4 – Oakes Basin Habitat Enhancement Project

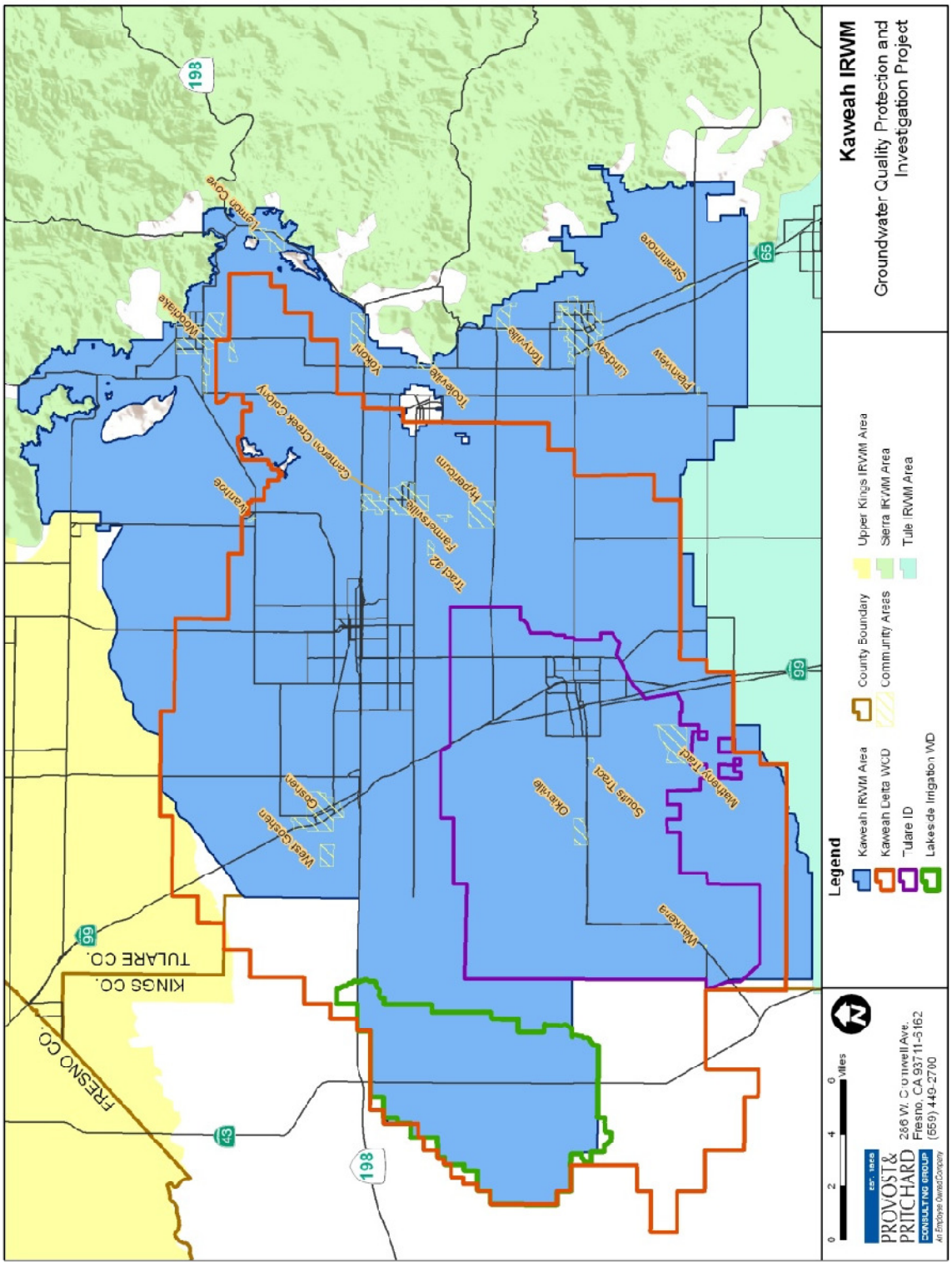

Figure 10.1.8-5 – Groundwater Quality Protection Project

10.1.9 Project Timing and Phasing

10.1.9.1 Plum Basin Project

The submitted Plum Basin Project is the second and third phases of a project that is already under construction. Progress on these phases of the Plum Basin project does not depend on any other part of the project being completed first. Also there are no linkages to any other projects that are essential to obtain the full benefits described in this Proposal.

10.1.9.2 Water Reuse Pipeline Project

This submitted Water Reuse Pipeline project is a part of an effort by the City of Visalia to upgrade their existing wastewater treatment plant and improve delivery of that treated water to multiple local uses. The Water Reuse Pipeline project is dependant the project that will upgrade the City's wastewater treatment plant from secondary treatment to tertiary treatment. Without the wastewater treatment plant upgrade the benefits from the Water Reuse Pipeline project will not be realized. Progress on the City's wastewater treatment plant upgrade is dependent on CEQA documentation that is currently being developed, successful selection of a qualified contractor for project construction, and the construction efforts to upgrade the City's wastewater treatment plant.

10.1.9.3 Paregien Basin Project

The submitted Paregien Basin project is a new project that will be constructed on lands that Kaweah Delta WCD already owns or controls under easement. Progress on the Paregien Basin project does not depend on any other part of the project being completed first. Also there are no linkages to any other projects that are essential to obtain the full benefits described in this Proposal.

10.1.9.4 Oakes Basin Habitat Enhancement Project

The submitted Oakes Basin Habitat Enhancement project is a new project that will be constructed on lands that Kaweah Delta WCD already owns or controls. Progress on the Oakes Basin Habitat Enhancement Basin project does not depend on any other part of the project being completed first. Also there are no linkages to any other projects that are essential to obtain the full benefits described in this Proposal.

10.1.9.5 GW Quality Protection and Investigation Project

The submitted Groundwater Quality Protection and Investigation project is a new effort and project by Tulare County. Progress on the Groundwater Quality Protection and Investigation project does not depend on any other part of the project being completed first. Also there are no linkages to any other projects that are essential to obtain the full benefits described in this Proposal.

10.2 Plum Basin Project Tasks

10.2.1 Budget Category (a): Direct Project Administration Costs

10.2.1.1 Task 1 - Administration

Although a joint project between Tulare ID and the City of Tulare, Tulare ID will administer the Plum Basin Project and work to manage and account for all aspects of the project. Tulare ID staff will take the lead in contracting for construction services and construction review for the project. Work performed by Tulare ID in this task will be coordination with consultants and stakeholders, attending meetings, and processing performance measurers and invoices. This effort will be regularly evaluated at monthly project meetings between the Project Manager, Tulare ID staff working on the project, consultants working for Tulare ID, and selected contractors. At these meetings progress over the previous month will be reviewed, issues in implementing the project will be discussed, and action items will be established for the next month.

Deliverables to DWR – Tulare ID will deliver monthly invoices of work accomplished to DWR. Within these reports pay requests from contractors, certified weekly payroll records, and verifications of prevailing wage compliance will be included.

10.2.1.2 Task 2 - Labor Compliance Program

A majority of the construction is anticipated to be completed by Tulare ID staff. This includes all earthwork and facility construction. Tulare ID will, however, contract out the construction of the monitoring wells. Tulare ID currently does not have a Labor Compliance Program for either the District or for District projects accomplished by contractors. As part of the work in this category Tulare ID will adopt and enforce a Labor Compliance Program pursuant to California Labor Code §1771.5(b). In compliance with California Labor Code §1771.8, Tulare ID's Labor Compliance Program will be in place at the time of contract award for this submitted project. This program will be created and enforced by a third party consultant.

As part of all work accomplished by Tulare ID, either through contractor or by Tulare ID staff, the Tulare ID standard practice is to verify prevailing wage rates for applicable personnel. In contracted situations, the Tulare ID requires that contractors and subconsultants to contractors submit weekly certified payroll. This information is then reviewed and compared to Tulare County prevailing wage rates to verify that the appropriate wages and benefits have been paid to employees working on Tulare ID projects. For Tulare ID employees, this is very rarely an issue because the Tulare ID compensates their staff at higher than prevailing wage rates. However, whenever there is a construction project undertaken by the Tulare ID, these rates are verified by the Tulare ID's accounting staff to ensure that appropriate compensation is provided to employees and that the Tulare ID fully complies with all portions of the California Labor Code.

Another part of the District's standard practice is to verify that all contractors employed by the Tulare ID for construction projects are appropriately licensed by the State of California and are in good standing.

Further, before commencing work, the contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the following insurance in a company or companies acceptable to the Owner. All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include, at a minimum, as additional insured: the Owner, the County, the State, the Federal Government, Provost & Pritchard Engineering Group, and their officers, employees, consultants and agents.

1. Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed; and Employer's Liability Insurance in an amount of at least $5,000,000.
2. Comprehensive Liability Insurance with limits of:
   Bodily Injury, Property Damage and Personal Injury - $5,000,000 each occurrence, $5,000,000 aggregate.

   This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance.
3. Automobile Liability on occurrence basis covering all owned, non-owned, and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $5,000,000 each occurrence.

4. Builder's Risk Insurance is required.

These limits shall be considered sufficient for the contractor associated with this project, provided however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

Deliverables to DWR – Tulare ID will deliver submit the Tulare ID's Labor Compliance Program to DWR. This program will be adhered to through the project in all dealings with the retained contractors and their personnel as well as Tulare ID employees accomplishing portions of the project work. Also, all contracts signed by Tulare ID for contracted services will be supplied to DWR for verification that they are consistent with the California Labor Code.

10.2.1.3 Task 3 - Reporting

Tulare ID staff will undertake the reporting effort the Plum Basin Project and will work to provide required materials to KDWCD consistent with what is outlined in this grant application and with the contract that Kaweah Delta WCD will sign as proposing agency for this IRWM grant with the State of California. Reporting, accounting, and administration will regularly be evaluated at monthly project meetings between the Project Manager, TID staff working on the project, consultants working for TID, and selected contractors. At these meetings progress, progress reports will be generated by the group that include site pictures of recent progress being made, and applicable construction logs will be included if available.

Tulare ID will also generate reporting of project progress to the IRWM group and to the Tulare ID's Board of Directors on a monthly basis.

Deliverables to DWR – Tulare ID will deliver quarterly progress reports as well as annual reports to DWR for this project. Within these reports site pictures of progress will be included, applicable construction inspection logs, and project team meeting agendas and minutes.

10.2.2 Budget Category (b): Land Purchase/Easements

A Joint Purchase Agreement was entered into between Tulare ID and City of Tulare on December 4, 2007 for the purchase of the recharge site. On January 15, 2008, the purchase of the property (APN: 150-010-026, 150-010-027, and 150-110-01) was recorded. Being that the site was purchased prior to September 30, 2008, it is not necessary to include in this proposal.

Deliverables to DWR – None

10.2.3 Budget Category (c): Planning/Design/Engineering/Environmental Documentation

10.2.3.1 Task 4 – Assessment and Evaluation

As Tulare ID and The City of Tulare were investigating the most feasible location for a new recharge facility, several locations were investigated prior to determining the Plum Basin site was the preferred alternative. These other locations are briefly described below:

Preliminary Mid-Valley Cotton Gin Site – Tulare ID investigated purchasing 20 acres located to the west of the Mid-Valley Cotton Gin on Cartmill Street just west of the railroad tracks. Tulare ID staff had a few meeting with Mid-Valley Cotton Gin staff and Board of Directors, however Tulare ID staff was never able to get to the point of an official offer. Tulare ID was also regarding this site due to Cartmill Street being the location of the new planned overpass structure over the railroad.

Preliminary Correia Property Site - The Correia family had property for sale on the northwest corner of Paige Avenue (Avenue 216) and Palm Avenue. The parcel was 161 acres in size and had access to the Main Canal and the Hooper Ditch. Tulare ID hired BSK Associates to provide exploratory sampling, which indicated that the site contained some heavier soils, which were suitable for high percolation rates. Due to the cost of the property and the poor recharge ability, Tulare ID decided to forgo the site.

Preliminary Avila Family Property Site – Tulare ID approached the Avila family to potentially utilize their property for a new office and recharge site. This family has approximately 80 acres located along Road 92 and Oakdale Avenue. Tulare ID made a proposal to the family, however the family had other plans for the property and after the initial offer there were no further discussions regarding the property.

The Plum Basin property was a plum orchard that was immediately south of an existing Tulare ID basin facility called Creamline Basins. This existing basin facility is located along the Tulare ID Main Canal and has excellent recharge capabilities. When the Plum Basin property became available Tulare ID approached the owner to express their interest in acquiring the property. Prior to purchasing the land, an evaluation of the site was performed to better understand the facility as a recharge site. Tulare ID contracted with a local geotechnical firm to perform a Permeability Characterization Report. To develop this report the firm performed eight soil borings throughout the project site.

Three borings used continuous sampling methods, while the remaining 5 used a depth-discreet method of sampling. With their findings a geologic cross section was developed to illustrate the stratigraphy beneath the project boundary. Sieve analysis and permeability test were performed on the soil samples to evaluate the site for recharge. The conclusion of the report supports the original assumption of the location being a favorable recharge site. See **Appendix A for the Plum Basin Project** for a copy of this report.

Deliverables to DWR – January 2008 Plum Basin Permeability Characterization Report by BSK Associates.

10.2.3.2 Task 5 – Final Design

The conceptual design of Plum Basin began in early 2008, followed by a topographic survey in June 2008. The project went through a few design iterations between the Tulare ID and the consultant prior to the final design completion in January 2009. Tulare ID's design consultant prepared an ALTA survey to indentify all boundaries, encroachments, easements, and benchmarks associated with the site. This survey was completed in January of 2009. Final Construction plans were completed and accepted by the Tulare ID in November 2009. The Tulare ID staff members are skilled builders of basin facilities and irrigation control structures. For this reason the project construction plans were made to Tulare ID standards and all required specification information was included on the set of construction plans. Also, no noticing, bid documents or contract was necessary for the project as the Tulare ID forces are envisioned to construct the facilities. For the small portions that are not being constructed by Tulare ID, Tulare ID will be using Tulare ID's supervisory control and data acquisition (SCADA) consultant and well driller to aid in the construction process. The project's construction plans have been included as **Appendix C under Attachment 3**.

Deliverables to DWR – November 2009 Plum Basin Construction Plans and ALTA survey map.

10.2.3.3 Task 6 – Environmental Documentation

Both CEQA and NEPA have been addressed in this project. For CEQA, an Initial Study determined that a Mitigated Negative Declaration was appropriate for the construction and operation of the project. This document was prepared, circulated and then adopted by the Tulare ID on February 10, 2010. NEPA first became a requirement for the project when Federal funding was made available to Tulare ID through a Bureau of Reclamation Water for America Challenge grant in 2009. For NEPA, an Environmental

Assessment determined that a Finding of No Significant Impact (FONSI) was appropriate for the construction and operation of Phase One of the project and it was approved by the Bureau of Reclamation on June 21, 2010. A second Environmental Assessment is being prepared for Phases Two and Three of the project in anticipation of another FONSI by the Bureau of Reclamation in the spring of 2011.

Deliverables to DWR – Tulare ID will deliver to DWR the approved and adopted Mitigated Negative Declaration for the Plum Basin Project (all phases) and adopting Tulare ID resolution from February 2010 (**Appendix B under Attachment 3**). Tulare ID will also deliver to DWR the Final Environmental Assessment and Finding of No Significant Impact from the Bureau of Reclamation for Phase One of the Plum Basin Project from June 2010 (EA-09-77, **Appendix E under Attachment 3**). Also, Tulare ID will deliver the draft Environmental Assessment for Phases Two and Three of the project by the Bureau of Reclamation.

10.2.3.4 Task 7 – Permitting

Tulare ID has already acquired three separate permits for this construction project. The first is a grading permit from the County of Tulare. The second is a Dust Control Permit from the San Joaquin Valley Air Pollution Control District. The third is a Storm Water Pollution Prevention Permit from the Regional Water Quality Control Board (**Appendix F under Attachment 3**).

A well driller's permit from Tulare County will also be required for the two monitoring wells. These permits will be acquired by the well drilling contractor from the County within 60 days of construction. No other permits are anticipated to be required.

Deliverables to DWR – Tulare ID will deliver to DWR the approved Tulare County grading permit, the Dust Control Permit from the San Joaquin Valley Air Pollution Control District, and the Storm Water Discharge Permit from the State Water Resources Control Board for the project. Also, after the well driller contracted to construct the two monitor wells for the project secures a well drillers permit from Tulare County, this permit will be provided to DWR as well.

10.2.4 Budget Category (d): Construction/Implementation

10.2.4.1 Task 8 – Construction Contracting and Deliverables

There has been no construction contracting work accomplished for the project to date. All of the construction accomplished to date has been by Tulare ID crews.

For the portion of work that Tulare ID is not performing in-house, Tulare ID will develop a bid solicitation package for the construction of monitoring wells and SCADA sites (separately), and will pursue a submittal of bids from qualified contractors. In the bid solicitation package Tulare ID will require proof of appropriate state licensing in order be selected for the work. Preference will be given to contractors that have a proven track record with Tulare ID. The request for submittal of bids will be made public in local newspapers as is consistent with State law. Tulare ID will conduct a mandatory pre-bid meeting with interested contractors to go over information in the construction documents and answer questions submitted by contracts. An attendance list will be generated for the meeting and detailed minutes will be taken of all discussions during the meeting. Submitting contractors will be required to provide unit costs for all listed items included in the work, an anticipated schedule for accomplishing the work, bid bonds, performance bonds, and adequate insurance to cover the work required by Tulare ID. The qualified low bidder who has fully satisfied the bid solicitation shall be awarded the work from Tulare ID. The selected contractor will be required to submit monthly invoices to Tulare ID for payment on the work accomplished and approved.

Deliverables to DWR – Advertisement for Bids; pre-bid contractors meeting; bid evaluation; award contract

10.2.4.2 Task 9 – Construction

There has been significant construction work accomplished for the project to date. Currently all of the irrigation control and measuring structures have been constructed for the project and Cell One of the basin has been completed. The tasks listed below would be accomplished as part of Phases Two and Three of the project after it was selected for grant funding.

10.2.4.2.1 Subtask 9.1 – Mobilization and Site Preparation

Tulare ID has brought their equipment on-site as needed for construction, meaning that mobilization has already occurred. Also, equipment has been rented for tasks that Tulare ID's equipment is not capable of performing.

Mobilization of contracted work (SCADA and well drilling) will not begin until the contract has been awarded through a bidding process, and a notice to proceed has been issued. At this point the contractors will move on-site to complete the work prior the agreed deadline.

10.2.4.2.2 Subtask 9.2 – Project Construction

Task 9.2.1 – Clearing and Grubbing: After Tulare ID mobilized to the project site they began the work of removing the plum orchard that was on the property so that construction could begin on the site. The existing irrigation system was also excavated and removed prior to construction.

Task 9.2.2 – Construction Staking: Construction stakes were provided by Tulare ID's consultant upon request near the edge of the basin, referencing a fixed design feature (i.e. centerline, inside toe of slope, inside hinge point, but not slope stakes), at 100-foot intervals and at all beginning and ends of curves, along the perimeter of the basin. Construction staking also referenced critical underground pipes and box culverts, and headwall and inlet/outlet structure locations. Also, cutsheets were provided to Tulare ID upon completion of each staking request, displaying stake locations and details.

Task 9.2.3 - Phase I Construction: In this phase of construction Tulare ID was responsible for the excavation of Cell 1, the construction of appurtenant turnout and intertie structures, and shallow piezometers. This includes the excavation of 266,610 cubic yards of native soil, and the casting of one structure containing 10 cubic yards (CY) of concrete. To date Tulare ID has constructed all permanent facilities (i.e., turnouts, spill structures, etc.) and is almost finished constructing the earthen basin for Phase I. Phase I is scheduled to be completed before June 2011.

SCADA installation and integration will be performed by a consultant after Tulare ID has performed their construction tasks. SCADA site construction will include installation of sensor for remote monitoring of facilities, construction of the remote terminal unit (RTU) and its appurtenances, and integrating the site to communicate with the existing Tulare ID system.

Task 9.2.4 - Phase II Construction: In this phase of construction Tulare ID will be responsible the excavation of Cell 2, the construction of appurtenant turnout and intertie structures, shallow piezometers and a shallow monitor well. This includes the excavation of 446,468 cubic yards of native soil, and the casting of one structure containing 10 CY of concrete. To date Tulare ID has constructed all permanent facilities (turnouts, spill structures, etc.) for Phase II but has not begun excavation of the earthen basin. Stockpile areas have been identified on the project site for excess or unsuitable materials encountered through the earthen basin construction. A portion of the earthen basin was excavated by the City of Tulare when the City needed fill material for a separate project. This excavated material was transported off-site by a contractor

retained by the City. Phase II construction is currently scheduled to be completed by May 2012.

SCADA installation and integration will be performed by a consultant after Tulare ID has performed their tasks. SCADA site construction will include installation of sensor for remote monitoring of facilities, construction of the remote terminal unit (RTU) and its appurtenances, and integrating the site to communicate with the existing Tulare ID system.

One shallow monitor well will be drilled in this phase. The monitor well will be contracted out to a C-57 licensed well driller. The monitoring wells will be drilled by qualified well drillers with experience in construction of monitoring wells. Well log information will include date of drilling, type of drill rig, type and diameter of drill bit, type of fluid additives, and depth of boring. Upon completion of drilling, the boring will be geophysically logged (E-logged) to aid in identifying aquifer and aquitard materials and the depth of occurrence of each. Monitoring zones and appropriate well screen intervals would be identified. The monitor well shall be drilled as an 8-inch hole and fitted with a 4-inch diameter, PVC casing, with slots made to allow water to enter the casing. A sanitary seal shall be installed on the monitor well, and an above ground lockable housing shall be constructed. This housing shall be made of metal and shall be painted for corrosion protection.

Task 9.2.5 Phase III Construction: In this phase of construction Tulare ID will be responsible for the excavation of Cell 3, the construction of appurtenant turnout and intertie structures, shallow piezometers and a shallow monitoring well. This includes the excavation of 163,083 cubic yards of native soil, and the casting of one structure containing 10 cubic yards of concrete. To date Tulare ID has constructed all permanent facilities (i.e., turnouts, spill structures, etc.) for Phase III, but has not begun to excavate the earthen basin. Phase III is scheduled to be completed by May of 2012.

SCADA installation and integration will be performed by a consultant after Tulare ID has performed their tasks. SCADA site construction will include installation of sensor for remote monitoring of facilities, construction of the remote terminal unit (RTU) and its appurtenances, and integrating the site to communicate with the existing Tulare ID system.

One shallow monitor well will be drilled in this phase. The monitor well will be contracted out to a C-57 licensed well driller. The monitoring wells will be drilled by qualified well drillers with experience in construction of monitoring wells. Well log information will include date of drilling, type of drill rig, type and diameter of drill bit, type

of fluid additives, and depth of boring. Upon completion of drilling, the boring will be geophysically logged (E-logged) to aid in identifying aquifer and aquitard materials and the depth of occurrence of each. Monitoring zones and appropriate well screen intervals would be identified. The monitor well shall be drilled as an 8-inch hole and fitted with a 4-inch diameter, PVC casing, with slots made to allow water to enter the casing. A sanitary seal shall be installed on the monitor well, and an above ground lockable housing shall be constructed. This housing shall be made of metal and shall be painted for corrosion protection.

Task 9.2.6 – Construction Inspection: This task will include site visits to the Project site to check on the construction of facilities as per the intended design at critical times, being present at concrete pours to test concrete slump and verify truck tags, and be available for compaction tests. These responsibilities will be accomplished by the Tulare ID Engineer or his representative. In general it was envisioned that on average two visits per week would be necessary during periods of normal excavation, and that field reports would be generated for each visit.

Task 9.2.7 – As-Built Drawings: Changes to the original design would be catalogued through construction and documented through an as-built set of plans for Tulare ID's records.

10.2.4.2.3 Subtask 9.3 – Performance Testing and Demobilization

Performance testing will vary for the work to be performed. For the work performed by Tulare ID in this project, only a few tests are required. Cylinder tests will be used to ensure the concrete meets required compressive strengths. Also, compaction testing is required to be performed on the levees to make certain minimum compaction requirements are met.

The monitoring wells will be inspected for material compliance. The casing size and quantity will be verified, as well as the type and size of the gravel pack. The water pumped during development will be analyzed to ensure all drilling fluids have been removed.

SCADA sites will be inspected to make certain all materials invoiced are installed. Prior to project close out the contractor will be required to demonstrate that the facility operates as intended. In addition, the contractor will also need to prepare an operations manual for the district that included program logic and product literature.

Once all testing and inspections have been performed and accepted, the contractor will demobilize and a Notice of Completion will be filed.

10.2.5 Budget Category (e): Environmental Compliance/ Mitigation/Enhancement

10.2.5.1 Task 10 – Environmental Compliance/Mitigation/ Enhancement

Based on results of the CEQA and NEPA documentation for the project, the project will likely not impact Federal of State protected species or natural communities. However, this task has been developed to mitigate any potential disturbance or impacts to protected species or communities. As previously discussed, the construction of the project's regulation basin will involve excavation of the floor of the basin and construction of earthen levees. Preventative measures will be used during construction to minimize potential impacts to wildlife, including:

- Vehicles should use slow speeds (<15 miles per hour), especially at night, when driving through or around the Project site to minimize potential for striking or disturbing animals. San Joaquin kit fox and other animals are vulnerable to collisions with autos.
- Open pipes and culverts should be inspected before being moved or altered to prevent wildlife from being injured or trapped.
- A pre-construction survey was performed to determine if there was a presence of the San Joaquin Kit Fox or the Swainson Hawk.
- If special status species are encountered during an inspection, they should be left alone to passively exit the area unless otherwise authorized by CDFG or USFWS.
- Any migratory birds and their nests should be not be disturbed as outlined in the Migratory Bird Treaty Act of 1918(MBTA). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations(CFR) Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21).
- If building or tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity should be conducted by a qualified biologist no more than 15 days before tree and building removal. If active nests are located

within the construction site, nests should be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance should occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity should include the trees on-site, burrows and open buildings (house/garage and shed).

As part of the mitigation measures defined in the CEQA and NEPA processes, a pre-construction survey was performed to determine if there was a presence of the San Joaquin Kit Fox or the Swainson Hawk. It was determined that there would be no impact and that construction could begin. This action will be repeated when the construction of Cells 2 and 3 prepare to begin.

Another mitigation measure requires Tulare ID to monitor for cultural resources throughout the construction process. If during the course of the project construction, any archaeological or historical resources are uncovered, discovered or otherwise detected or observed, activities within 50 feet of the find shall be ceased.

This work item includes the cost for implementation of the Dust Control Plan (DCP), and all revisions Tulare ID deems necessary to comply with all federal, state, and local air pollution laws and regulations; finalizing, submitting, and implementation of the Stormwater Pollution Prevention Plan (SWPPP), and all revisions Tulare ID deems necessary to comply with all federal, state, and local water pollution laws and regulations. Also included in this work item is the construction and maintenance of all of the facilities required to comply with the DCP and SWPPP; removal of the required facilities upon project completion; and shall include full compensation for providing all miscellaneous materials, incidentals, labor, tools and equipment and for doing all work involved as detailed in the Plans and Specifications, and complying with the DCP, SWPPP, and their respective subsequent revisions.

10.2.6 Budget Category (f): Construction Administration

10.2.6.1 Task 11 – Construction Administration

Construction Administration will be handled by the Tulare ID Engineer, Aaron K. Fukuda, P.E. Mr. Fukuda has overseen many of the Districts construction projects, and prior to becoming the engineer of Tulare ID, was a consulting engineer for similar projects.

Prior to construction, Tulare ID staff will work with the contractor to verify that the material and equipment used in construction of the monitoring wells and SCADA sites is

consistent with applicable ordinance codes and that material suppliers are identified and approved. Tulare ID staff will work with the selected contractors to verify that all work is accomplished by the contractor as per the contract, that the contractor bills Tulare ID appropriately for the work and that warranty over the work is established by date and honored until the agreed upon expiration date has passed. If unforeseen circumstances are encountered by the selected contractor, Tulare ID staff will expeditiously work to make a determination whether the circumstance is a material change to the work described in the contract. If this is determined, the contractor shall be compensated for this change.

10.3 Water Reuse Pipeline Project Tasks

10.3.1 Budget Category (a): Direct Project Administration Costs

10.3.1.1 Task 1 - Administration

Although this a joint project between Tulare ID and the City of Visalia, the City of Visalia will administer the Water Reuse Pipeline Project and work to manage and account for all aspects of the project. The City of Visalia staff will take the lead in contracting for construction services and construction review for the project. Work performed by City of Visalia in this task will be the coordination with consultants and stakeholders, attending meetings, and processing performance measurers and invoices.

Deliverables to DWR – The City of Visalia will deliver monthly invoices of work accomplished to DWR. Within these reports pay requests from contractors, certified weekly payroll records, and verifications of prevailing wage compliance will be included.

10.3.1.2 Task 2 - Labor Compliance Program

All of the construction associated with the project is anticipated to be contracted out. While the City of Visalia currently does have a Labor Compliance Program that is Caltrans compliant, it is not know if this program meets DWR Requirements. As part of the work in this category Tulare ID, the project partner, will adopt and enforce a Labor Compliance Program pursuant to California Labor Code §1771.5(b). In compliance with California Labor Code §1771.8, Tulare ID's Labor Compliance Program will be in place at the time of contract award for this submitted project. This program will be created and enforced by a third party consultant.

As part of all work accomplished by the City of Visalia, either through contractor or by City staff, the City of Visalia standard practice is to verify prevailing wage rates for applicable personnel. In contracted situations, the Tulare ID requires that contractors

and subconsultants to contractors submit weekly certified payroll. This information is then reviewed and compared to Tulare County prevailing wage rates to verify that the appropriate wages and benefits have been paid to employees working on District projects. For City of Visalia employees, this is very rarely an issue because the City of Visalia compensates their staff at higher than prevailing wage rates. However, whenever there is a construction project undertaken by the City of Visalia, these rates are verified by the City of Visalia's accounting staff to ensure that appropriate compensation is provided to employees and that the City of Visalia fully complies with all portions of the California Labor Code.

Another part of the City of Visalia's standard practice is to verify that all contractors employed by the City of Visalia for construction projects are appropriately licensed by the State of California and are in good standing.

Further, before commencing work, the contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the following insurance in a company or companies acceptable to the Owner. All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include, at a minimum, as additional insured: the Owner, the County, the State, the Federal Government, the City of Visalia's Engineering Consultant, and their officers, employees, consultants and agents.

1. Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed; and Employer's Liability Insurance in an amount of at least $15,000,000.

2. Comprehensive Liability Insurance with limits of:

   Bodily Injury, Property Damage and Personal Injury - $15,000,000 each occurrence, $15,000,000 aggregate.

   This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance.

3. Automobile Liability on occurrence basis covering all owned, non-owned, and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $15,000,000 each occurrence.

4. Builder's Risk Insurance is required.

These limits shall be considered sufficient for the contractor associated with this project, provided however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

Deliverables to DWR – The City of Visalia will deliver and submit its Labor Compliance Program to DWR. This program will be adhered to through the project in all dealings with the retained contractors and their personnel as well as Tulare ID or City of Visalia employees accomplishing portions of the project work. Also, all contracts signed by the City of Visalia for contracted services will be supplied to DWR for verification that they are consistent with the California Labor Code.

10.3.1.3 Task 3 - Reporting

City of Visalia staff will undertake the reporting effort for the Water Reuse Pipeline Project and will work to provide required materials to DWR consistent with what is outlined in this grant application and with the contract that Kaweah Delta WCD will sign as proposing agency for this IRWM grant with the State of California. Reporting, accounting, and administration will regularly be evaluated at monthly project meetings between the Project Manager, City of Visalia staff working on the project, consultants working for the City of Visalia, and selected contractors. At these meetings progress, progress reports will be generated by the group that include site pictures of recent progress being made, and applicable construction logs will be included if available.

The City of Visalia will also generate reporting of project progress to the IRWM group and to the City Council on a monthly basis.

Deliverables to DWR – The City of Visalia will deliver quarterly progress reports as well as annual and final reports to DWR for this project. Within these reports site pictures of progress will be included, applicable construction inspection logs, and project team meeting agendas and minutes.

10.3.2 Budget Category (b): Land Purchase/Easements

The City of Visalia has begun the process of land and easement acquisitions. The majority of project construction would occur within Tulare County right-of-way, and initial discussions have indicated no problems in acquiring access for the project. It is likely that it will be necessary to acquire approximately 4.25 acres from one private owner. Discussions with this owner are in process, but no appraisals have begun. Currently, it is anticipated that land costs will be approximately $5,000 per acre to acquire the land.

The land for new regulating basins has already been acquired, however, pipeline alignments will require an easement from the landowners. This easement will be prepared by a licensed surveyor in the State of California prior to the anticipated grant award in June 2011.

10.3.3 Budget Category (c): Planning/Design/Engineering/Environmental Documentation

10.3.3.1 Task 4 – Assessment and Evaluation

In 2008, the City of Visalia contracted with Carollo Engineers, to develop a Master Plan for its Water Conservation Plant with a goal of developing a sustainable water reuse program for the community. As a result, a project was conceptualized that would allow the City to reuse up to 26 MGD of water. This has been further refined by the City of Visalia to deliver water to City of Visalia owned facilities, as well as Tulare ID to offset surface and ground water demands. This idea of using recycled waste water has been a goal of the IRWM participants as demonstrated by the Tulare ID's Groundwater Management Plan. Also, this project is consistent with the Additionally, in support of this project, Provost and Pritchard Consulting Group prepared a technical Memorandum, dated February 24, 2010, that evaluates offsite pipeline facilities and the project implementation.

Task 4.1 – Project Technical Report: A preliminary topographic survey was conducted. Research was then conducted using existing recorded maps, previously generated improvement plans and existing permits. From the gathered information a project basemap was generated and a technical report on the potential design and construction issues for the project was drafted.

The Project Technical Report for this effort was a conceptual evaluation of the feasibility of potential project alternatives in an effort to select a preferred alternative and understand the basis of design for this facility. The Technical Report consisted of the following sections:

- Review of the City of Visalia's Water Conservation Plant Masterplan (wastewater treatment plant improvement and expansion planning document);
    - Estimation of the anticipated increase in wastewater flows over the foreseeable future;
    - Evaluation of the potential uses of the treated wastewater given the treatment level planned for the improved plant.
- Evaluate and Analyze area surrounding the existing wastewater treatment plant:
    - Land Use;
    - Cropping;

        - Identify potential issues for delivery of treated wastewater;
        - Estimate consumptive use and likely irrigated demand for existing cropping.
    - Construction Obstacles;
    - Existing water conveyance systems;
    - Existing City of Visalia parks in the area;
        - Identify potential issues for delivery of treated wastewater;
        - Estimate consumptive use and likely irrigated demand for existing cropping.
    - Valley Oaks Golf Course;
        - Identify potential for the irrigation of turf at the Golf Course and delivery to water features;
        - Estimate consumptive use and likely irrigated demand for existing turf;
        - Estimate potential groundwater recharge from water features.
    - City of Visalia Airport; and
    - Tulare ID service area.
- Conceptually design a water reuse delivery system:
    - Alternative to deliver water to only City of Visalia facilities;
    - Alternative to deliver water to existing growers in the wastewater treatment plant area;
    - Alternative to deliver water to Tulare ID service area;
    - Alternative to deliver water to local golf course, airport and City of Visalia green areas; and
    - Alternative to deliver water to recharge basins on east side of City of Visalia.
- Development of costs and benefits for each alternative water reuse delivery system design:
    - Construction Costs;
    - Operation and Maintenance Costs;
    - Necessary right-of-way acquisition;
    - Potential issues associated with existing utilities in the area; and
    - Necessary permits and agreements.

This work has been completed for this project.

Tasks 4.2 – 4.4 all include the description of the development of a 60% design for these tasks. The reason they were separated was to provide greater detail about the items that were designed. As these portions of the work were identical to all three, they are stated once here to avoid being redundant.

A design level topographic survey of the project area and alignment was conducted and the information was used to develop a digital terrain model of the project alignment. This information was used to generate a 10% (conceptual) design for the "subject design". This design showed the project alignment and the layout of all major facilities water control. The 10% (Conceptual) design was

then further analyzed and additional design was accomplished such that a 60% (conceptual) design was generated. Overall facility diameters, widths, vertical grade, construction material and other project related specifics have been identified on the 60% design plans and generic specifications and contract documents are being assembled. Information from geotechnical investigations has also been included in the project design.

Task 4.2 – Mill Creek Bypass to Basin 4 Pipeline: The Mill Creek Bypass to Basin 4 Pipeline has been determined to be a 60-inch diameter reinforced concrete pipeline that is approximately 6,500 feet long. This facility will require many air vents, a concrete metering vault, a terminal discharge weir structure, and a gate valve vault. This design task has currently been accomplished for the project (see **Appendix I for Attachment 3**).

Task 4.3 – Regulating Basins, Pump Station and Tulare ID Water Reuse Pipeline: This work item includes the preliminary design of the project's regulation basins, pump station and the Tulare ID Water Reuse Pipeline (south of the Mill Creek Bypass to Basin 4 Pipeline). Preliminary regulation basin design consists of two cells, covering approximately 20 acres, requiring excavation of approximately 15,000 cubic yards. The Tulare ID Water Reuse Pipeline design consists of 60-inch diameter reinforced concrete pipeline that is approximately 10,300 feet long. These facilities will require many air vents, road crossings, access structures, metering vaults and a host of other miscellaneous water diversion and control structures. This design task has currently been accomplished for the project (see **Appendix I for Attachment 3**).

Task 4.4 – Low-Head Irrigation Pipelines: The design of the low-head irrigation pipelines includes both the City of Visalia's Water Reuse Pipeline (east of regulating reservoir. The City of Visalia's Water Reuse Pipeline design consists of C905 PVC pipeline that varies in diameter from 18 to 36 inches and totals approximately 24,180 feet long. This facility will require many air vents, road crossings, access structures, metering vaults and a host of other miscellaneous water diversion and control structures. This design task has currently been accomplished for the project (see **Appendix I for Attachment 3**).

Task 4.5 – Legal Descriptions for Easements: A land surveying or civil engineering consultant will work with the City of Visalia to generate new easement descriptions and schematics for recording with the County of Tulare overall project properties. This task will be accomplished prior to the anticipated grant award of June 2011.

10.3.3.2 Task 5 – Final Design

The City of Visalia has contracted with Parsons Corporation for design services related to their wastewater treatment plant improvements and reuse pipeline system. Parsons Corporation is the prime consultant, but is primarily handling the design of the wastewater treatment plant improvements. Parsons Corporation has subcontracted with Provost and Pritchard Consulting Group to develop the offsite water reuse piping network. Currently the project is a 60% level of completion. At this level, all alignments have been determined, the facilities have been sized, and the operations are understood. As the project progresses, the design team still has to develop the site details and integration of the SCADA system. It is expected that Provost and Pritchard Consulting Group will finish their portion of work in March 2011, with Parsons Corporation finishing shortly thereafter, in July 2011.

All three of the following work tasks involve the development of the 60% (conceptual) design to a 90% (pre-final) design and then eventually a 100% (final) design. The 90% design is a final unstamped submittal to the City of Visalia and other project consultants for review and comment. Complete plans, specifications and a detailed estimate of probable anticipated cost will be available to the City of Visalia for this review. After final comments have been received from the City of Visalia on the 90% design, the 100% design package will be generated. The 100% design will be ready for advertisement by the City of Visalia through a notice to bidders for the project. The package will include complete, signed and "as-advertised" plans and specifications. It is anticipated that both of these design development steps will be accomplished prior to June 2011.

- Task 5.1 – Mill Creek Bypass Pipeline to Basin 4
- Task 5.2 – Regulation Basin, Pump Station and Tulare ID Water Reuse Pipeline
- Task 5.3 – City of Visalia Water Reuse Pipelines

Deliverables to DWR – The City of Visalia will deliver final project construction drawings signed by a registered Civil Engineer in the State of California, project specifications signed by a registered Civil Engineer in the State of California; competitive bid solicitation documents; and project contract documents based on the State Standard Specifications to DWR (four printed copies and one electronic copy). These documents will be provided to DWR within 30 days of being finalized and accepted by the City of Visalia.

10.3.3.3 Task 6 – Environmental Documentation

Environmental documentation for the project has been initiated and it anticipated to be completed prior to the award of the grant.

Task 6.1 – CEQA Documentation

Subtask 6.1.1 – Project Analysis Overview, Description and Background: Immediately after the City of Visalia's consultant received the City of Visalia's authorization to proceed, they initiated the project by scheduling an initial meeting to discuss and agree upon assumptions, parameters, and scope for all studies and documents related to the CEQA/NEPA process, including cumulative impacts, direct and indirect impacts, and project alternatives. The City of Visalia's consultant also inquired about the City's preferred format and structure of the EIR/EIS. The City of Visalia's consultant then also gathered all pertinent information and reports associated with the project, including technical studies, planning documents, maps, aerial photos, and other documentation and necessary data.

Following the initial meeting, the City of Visalia's consultant conducted a field reconnaissance of the project site and surrounding area and documented the existing conditions with photos and environmental inventories. This existing condition became the baseline for subsequent environmental documentation.

Upon completion of the field investigation, the City of Visalia's consultant obtained available data and perform additional research to develop the project description. The project description includes a detailed narrative of the proposed project components, accompanied by graphics and maps to highlight the project location and elements. A draft of the project description was submitted to the City of Visalia for approval early in the process to ensure that we share a common understanding of the project and phases being evaluated. Also work with the City of Visalia and applicant to develop a list of project objectives was developed by both parties. This is an important step toward the development of a reasonable range of alternatives to be addressed later in the process.

The City of Visalia's consultant has received all necessary information to develop the project description. Examples include finalized site plans, elevations, and limited engineering schematics (i.e., grading, site drainage, sanitary sewer and water system plan, and/or street design plans). These were available prior to preparation of the Notice of Preparation/Notice of Intent (NOP/NOI).

Subtask 6.1.2 – Prepare and Distribute Initial Study and Notice of Preparation/Notice of Intent: The City of Visalia's consultant used information gathered from the initial meeting and field investigation, during development of the project description, and during the review of background information to prepare and submit a detailed Administrative Draft Initial Study (IS) and Administrative Draft NOP/NOI for City of Visalia review. Approximately two weeks is scheduled from submittal of the Administrative Draft IS for their review and comment and the City of Visalia's consultant will need two weeks for the preparation of the Final IS and NOP/NOI. The City of Visalia's consultant also is scheduled to mail up to 30 copies of the IS and NOP/NOI to agencies or persons on a mailing list provided by the City of Visalia, including the NOP to the State Clearinghouse and the NOI to the Federal Register.

Subtask 6.1.3 – Prepare Administrative Draft EIR/EIS: This work subtask includes the City of Visalia's consultant preparing the environmental impact analysis in accordance with CEQA/NEPA and using the Governor's Office of Planning and Research's (OPR's) most current Thresholds of Significance. The EIR/EIS will include all of the required contents and will include a detailed inventory of existing conditions, thresholds of significance used for the evaluation of impacts, an analysis of the environmental impacts and levels of significance, and appropriate mitigation measures for each environmental discipline.

The City of Visalia's consultant will evaluate the information with respect to the existing conditions, the adverse effects of project construction and long-term operation (project specific and cumulative impacts), and mitigation measures to reduce environmental effects. The analyses will be based upon available data and literature, technical studies provided by the project applicant's team, and supplemental research and analysis by the City of Visalia's consultant.

Given the number of technical reports and analysis that needs to be prepared for this project, the City of Visalia's consultant has scheduled eight months to complete the Administrative Draft EIR/EIS. The City of Visalia's consultant has also assumed that the City of Visalia will need a minimum of 30 days to review the Administrative Draft EIR/EIS.

The EIR/EIS will focus on the potentially significant environmental impacts identified in the IS. While these issues are subject to change, we anticipate that the EIR/EIS will address the issues described in the approach below:

- Major topics:
    - Air Quality and Climate Change;
    - Biological Resources;

  - Cultural Resources;
  - Hydrology and Water Quality;
  - Growth Inducement;
  - Noise;
- Minor topics:
  - Aesthetics;
  - Agricultural Resources;
  - Geology and Soils;
  - Hazards and Hazardous Materials;
  - Mineral Resources;
  - Land Use and Planning;
  - Public Services and Utilities;
  - Recreation;
  - Traffic and Transportation;
- Consequences of Project Implementation:
  - Cumulative Impacts;
  - Growth-Inducing Impacts;
  - Significant Irreversible Environmental Changes;
  - Effects found to be significant
- Alternatives

Subtask 6.1.4 – Prepare and Distribute Draft EIR/EIS and NOC/NOA: This subtask will involve using comments received from the City of Visalia during the review of the Administrative Draft EIR/EIS. The City of Visalia's consultant will revise and finalize the Draft EIR/EIS for the 45-day public review period. It is assumed that two weeks will be necessary to make the necessary changes requested by the City of Visalia. The City of Visalia's consultant will mail up to 30 CD and 15 hardcopies copies of the Draft EIR/EIS to agencies or persons on a mailing list prepared by the City of Visalia's consultant with consultation from the City of Visalia; additional mailings are outside of this scope of work. The City of Visalia's consultant will also prepare the Notice of Completion (NOC) and submit it the State Clearinghouse as well as the Notice of Availability (NOA) to the Federal Register, including posting the NOA at the County Clerk, the City of Visalia's consultant will also provide mailings to local residents and newspaper notices.

Subtask 6.1.5 – Prepare Administrative Draft Final EIR/EIS: This subtask will include the City of Visalia's consultant evaluating comments received and preparing administrative draft responses to comments for comment letters received during the public review period. It is assumed that it will take three weeks to prepare the Administrative Draft Final EIR/EIS. These responses to comments, along with any changes to the Draft EIR/EIS deemed necessary by the City of Visalia, will be submitted to the City of Visalia as the Administrative Draft Final EIR/EIS. The Final EIR/EIS will

include a title page, table of contents, introduction, errata and clarifications, and response to comments chapters.

Subtask 6.1.6 – Prepare and Distribute Final EIR/EIS: This subtask will include the City of Visalia's consultant incorporating revisions into, producing, and distributing the Final EIR/EIS, by the City of Visalia Planning Commission and City of Visalia Council. It is assumed that the City of Visalia will need one week to review the Administrative Draft Final EIR/EIS and that one week will be needed to prepare the Final EIR/EIS. The Final EIR/EIS will contain comments received on the Draft EIR/EIS (or changes to the Draft EIR/EIS as Errata). Subtasks 6.1.8, 6.1.9, and 6.1.10 will be prepared concurrently with this task in order to deliver the Final EIR/EIS, Mitigation Monitoring and Reporting Program, and Findings of Fact and Statement of Overriding Consideration (if necessary) at the same time. Fifteen hardcopies and 30 CDs will be submitted to the Planning Department in advance of the Planning Commission hearing and mailed to agencies or persons the approved mailing list at least three weeks prior to the Planning Commission's consideration of this EIR/EIS; additional mailings are outside of this scope of work.

Subtask 6.1.7 – Prepare Admin. Draft and Final Mitigation Monitoring and Reporting Program: This work subtask will include the City of Visalia's consultant preparing a Mitigation Monitoring and Reporting Program (MMRP) that outlines all mitigation, steps for compliance, and responsible parties to ensure compliance. It is assumed that it will take three weeks to prepare the Administrative Draft Mitigation Monitoring and Reporting Program and one week to prepare the Final, anticipating that the City of Visalia will need one week for review of the Administrative Draft.

Subtask 6.1.8 – Prepare Admin. Draft and Final Findings of Fact Statement of Overriding Consideration (if necessary): This wok subtask will include the City of Visalia's consultant preparing Findings of Fact in accordance with Sections 15091 and 15093 of the CEQA Guidelines, and, if necessary, a Statement of Overriding Considerations for the EIR/EIS. It is assumed that it will take three weeks to prepare the Administrative Draft Findings of Fact and Statement of Overriding Considerations and one week to prepare the Final, anticipating that the City of Visalia will need one week for review of the Administrative Draft.

Subtask 6.1.9 – Prepare Admin. Draft and Final Staff Report and Resolution: This work subtask involves the City of Visalia's consultant preparing one Staff Report for use at the Planning Commission and City of Visalia Council hearings. The City of Visalia's consultant will also prepare any necessary resolutions for use by the City of Visalia.

The City of Visalia's consultant has scheduled take three weeks to prepare the Administrative Draft Staff Report and Resolution and one week to prepare the Final, anticipating that the City of Visalia will need one week for review of the Administrative Draft.

Subtask 6.1.10 – Prepare and File Notice of Determination and Record Decision: This work subtask involves preparation and filing the Notice of Determination (NOD) with the Tulare County Clerk and the Record of Decision (ROD) with EPA.

Subtask 6.1.11 – Meeting Attendance and Project Management: The City of Visalia's consultant has budgeted hours for as-needed project management during the EIR/EIS preparation. These project management hours will be used for time spent coordinating the documentation effort. The City of Visalia's consultant has also budgeted for required and as-needed meeting attendance. The presence of the City of Visalia's consultant will be required at one Planning Commission hearing (at four hours for two representatives) and at one City of Visalia Council hearing (at four hours for two representatives). The City of Visalia's consultant is aware that the consultant is expected to participate in the presentation of the EIR/EIS at both the Planning Commission and City of Visalia Council hearings. Additionally, the City of Visalia's consultant has budgeted an additional 24 hours for extra meetings or hearings, as necessary.

Task 6.2 – NEPA Document Preparation: NEPA became a requirement for the project when Federal funding was made available to Tulare ID through a Bureau of Reclamation WaterSMART grant in 2010. For NEPA compliance, an Environmental Assessment will be pursued in anticipation of determining that a Finding of No Significant Impact (FONSI) is appropriate for the construction and operation of the project. As neither the City of Visalia nor Tulare ID is a federal agency, the Bureau of Reclamation must be the lead agency for NEPA compliance. However, the Bureau of Reclamation allows Tulare ID to be involved in the process to expedite the required timeline through the involvement of Tulare ID's environmental consultant. The effort shown in the project budget associated with this task is the development of a draft Environmental Assessment by Tulare ID's environmental consultant and work with Bureau of Reclamation staff in internally processing the document prior to public review.

Deliverables to DWR – The City of Visalia will work with DWR to deliver draft CEQA documentation for DWR staff review and comment prior to the City's distribution of CEQA documents to other responsible agencies. Approved and adopted CEQA documentation, including the environmental checklist and biological assessment, Initial

Study, the Notice of Intent adopt the CEQA documentation, proof of transmittal to the state clearinghouse, all received comment letters from responsible agencies and members of the public, responses to issues brought up in the public review process, the resolution accepting the finalized documentation and instructing the City staff to file the Notice of Determination with the county clerk and the state clearinghouse. These documents will be provided to DWR in printed and electronic versions within 30 days of being finalized and accepted by City of Visalia's City Council.

10.3.3.4 Task 7 – Permitting

Project permitting has not yet begun; however, it appears that permits for the construction of the facility will be necessary from the California Department of Fish and Game, the Army Corps of Engineers, the Regional Water Quality Control Board, the Air Resources Board, and Tulare County. All permitting tasks are anticipated to be completed prior to grant award in June 2011.

Task 7.1 – California Dept of Fish and Game Streambed Alteration permit (1602): As the project will include an underground crossing of what has been determined to be a streambed under the jurisdiction of the California Dept of Fish and Game (Mill Creek), a Streambed Alteration Permit will be required for the construction of the project. The City of Visalia will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during environmental documentation. Then City of Visalia staff and consultants will work with staff from the California Dept of Fish and Game to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the California Dept of Fish and Game. It is understood that the California Dept of Fish and Game will not issue the permit until CEQA is formally adopted by the City of Visalia, as the issuance of the permit is a formal action by the California Dept of Fish and Game that requires CEQA compliance. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.2 – Army Corps of Engineers Permit for Section 404 of the Clean Water Act: As the project will include an underground crossing of what has been determined to be a channel under the jurisdiction of the Army Corps of Engineers (Mill Creek), a Section 404 Permit will be required for the construction of the project. The City of Visalia will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during environmental documentation. Then City of Visalia staff and consultants will work with staff from the Army Corps of Engineers to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the Army Corps of Engineers.

The City of Visalia will apply for a nationwide permit, which is a more readily available type of permit from the Army Corps of Engineers which does not require NEPA compliance prior to the Army Corps of Engineers issuing the permit. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.3 – Stormwater Pollution Prevention Permit from the Regional Water Quality Control Board: As the project construction of the facility will likely disturb more than 1.0 acre of area it is it is anticipated that a SWPPP Permit from the RWQCB will be required for the construction of the project. The City of Visalia will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during environmental documentation. Then City of Visalia staff and consultants will work with staff from the RWQCB to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the RWQCB. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.4 – Dust Control Plan with the Air Resources Board: Given the amount of earthmoving involved in the construction of the project, it is it is anticipated that a DCP will be required from the Air Resources Board. The City of Visalia will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during environmental documentation. Then City of Visalia staff and consultants will work with staff from the Air Resources Board to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the RWQCB. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.5 – Tulare County Encroachment Permit: As a portion of the anticipated construction area will be adjacent to or within Tulare County right-of-way, it will be necessary to apply for an encroachment permit from the County. This permit could be delayed and applied for by the selected contractor who will build the facility, but it is believed that it would be better to work through the project issues prior with the County before the project is awarded so that bidding contractors can be made aware of the requirements of the permit that will become a part of the construction documents. This encroachment permit is anticipated to specify the acceptable traffic control plan for project construction in County roadways and the required replacement pavement section for all locations where existing pavement is disturbed.

Deliverables to DWR – City of Visalia will deliver project permits from the California Department of Fish and Game, the Army Corps of Engineers, the Regional Water

Quality Control Board, the Air Resources Board, and Tulare County to DWR. These documents will be provided to DWR within 30 days of being finalized and received by the City of Visalia. No other permits are anticipated to be required.

10.3.4 Budget Category (d): Construction/Implementation

10.3.4.1 Task 8 – Construction Contracting and Deliverables

The project design is currently conceptual and has been developed to a 60% design. The tasks listed below would be accomplished as part of the project after it was selected for grant funding.

Task 8.1 – Publish Notice to Bidders: A notice to bidders will be published in a local newspaper on the same day of the week in three successive weeks. This notice will provide the official title for the project and briefly describe the work sought from bidding contractors. It will also present the location where bids shall be submitted as well as the date and time when bids will be publicly opened and read. The notice will describe the required conditions of the bid packet for acceptance and will describe the required mandatory pre-bid meeting's date, time and place. The notice shall describe where bidding documents can be acquired and how much they will cost. Further the notice shall describe to bidders that prevailing wages will be required for the job, that bidder's bonds in the amount of 10% of the base bid are required, and the required contractor's license classification for the project.

Task 8.2 – Pre-Bid Meeting and Addendum No. 1: As part of the public bid solicitation process, the City of Visalia will conduct a mandatory pre-bid meeting with interested contractors to go over information in the construction documents and answer questions submitted by contracts. An attendance list will be generated for the meeting and detailed minutes will be taken of all discussions during the meeting. The attendance list from this meeting, the questions asked at this meeting and the responses to these questions will be summarized in one document that will become Addendum Number One to the Contract Documents and will be distributed to all plan holders and contractors that were present at the pre-bid meeting.

Task 8.3 – Bid Opening and Bid Evaluation: An attendance sheet will be kept for the bid opening. The project engineer, his representative or the District engineer will keep the official clock as to when the time for acceptable bid submittals has passed. After that time has been declared, all submitted bids will be collected, will be opened and the submitting contractor and total bid amount and will be read aloud to those present. Then this meeting will be closed and the project engineer, his representative or the

District engineer will begin evaluating the submitted bids. The contractor's license, the bond amounts, the bond rating of the issuing company, the insurance and the contractor's history of claims, the math involved in the bid proposal, the preliminary project schedule, the subconsultants listed, similar project experience, listed references, as well as the certifications and required forms will all be checked against what was required in the contract documents. A summary of this evaluation of bids will be generated for the District staff and the Board of Directors to consider.

Task 8.4 – Bid Award: After the selection of the successful bidder for the project by the District's Board of Directors, project engineer, his representative or the District engineer will prepare the Notice of Award for submittal to and signature from the selected contractor. The project engineer, his representative or the District engineer will work to issue and have signed all remaining documents within the contract and review, receive and verify all project bonding, and comment and eventually approve all product submittals and submitted plans. Prior to the contractor moving any equipment to the site, it will be re-visited by the biological consultant to verify that conditions have not changed since it was originally evaluated. Also a flier will be produced for the contractor regarding any cultural resource or sensitive species issues that need to be kept in mind during construction and regularly checked. After this is accomplished the project engineer, his representative or the District engineer will issue the Notice to Proceed. This notice will officially begin the contractor's allowable timeframe for the construction of the facility.

Deliverables to DWR – The City of Visalia will deliver the project's advertisement for bids from a local publication, the agenda and minutes from the pre-bid contractors meeting, information regarding the evaluation of bids submitted to the City of Visalia, and information and documentation on the award of all construction contracts to DWR. These documents will be provided to DWR within 30 days of being finalized and received by the City of Visalia.

10.3.4.2 Task 9 – Construction

Construction activities for this project will be contracted by the City of Visalia for the construction of the regulation basins, pump station, Mill Creek Bypass Pipeline to Basin 4, City of Visalia Water Reuse Pipelines, and the Tulare ID Water Reuse Pipeline. None of this construction has been accomplished yet and none of it is anticipated to be accomplished prior to the award of this grant.

It should be noted that the suggested tasks have been slightly adjusted in Task 9 because of the nature of the construction efforts involved in this project. No specific

subtask is listed for mobilization and site preparation under Task 9 because each of the subtasks identified will require some level of mobilization as the sites are spread out and the different subtasks will require different construction equipment. Therefore it is intended that mobilization, worker protection and the creation, maintenance and operation of miscellaneous facilities related to construction efforts will be included in each subtask listed below.

10.3.4.2.1 Subtask 9.1 – WCP Discharge Piping

This work item will include furnishing and installing 2,850 feet of 72-inch RGRCP pipeline from the improved Water Conservation Plant (the new name for the City of Visalia's wastewater treatment plant) to the new regulation basins. This pipeline will include a few minor bends and the controls for this pipeline will be outfitted with SCADA so that information on the system will be made available to be monitored by City of Visalia Staff back at the yard for the Public Works department as well as inside the Water Conservation Plant.

10.3.4.2.2 Subtask 9.2 – New Regulation Basins

This work item will include constructing a new two cell 20 acre regulation basin that will require approximately 15,000 cubic-yards of excavation. The construction of the basins will include water control structures between the two cells that employ manual sluice gates. Concrete spillway structures will be constructed on both cells of the basin to provide protection against failure. This facility will also include a new concrete metering vault in the bank of the regulation basin that will employ a transducer styled flow meter. SCADA equipment will be installed at this location to monitor the water level in both cells, the measured flows leaving the basins and the metered flows coming into the basin. This information will be made available to be monitored by City of Visalia Staff back at the yard for the Public Works department as well as inside the Water Conservation Plant.

10.3.4.2.3 Subtask 9.3 – New Pump Station

This work item will furnish and install a new pump station with one 60 HP constant speed pump, one 60 HP variable speed pump and one 125 HP constant speed pump with piping, valves, electrical and appurtenances. The new concrete pump station structure is anticipated to consist of approximately 188 cubic-yards of concrete. This work item will include all necessary work to extend electrical service to the site and to work with the utility to activate the service and make the connection to the new pump station functional.

10.3.4.2.4 Subtask 9.4 – Mill Creek Bypass Pipeline to Basin 4

This work item will include furnishing and installing 6,510 feet of 60-inch RGRCP pipeline from the new regulation basins and pump station to the City of Visalia's existing Basin 4. This pipeline will include several bends, a few road crossings, a concrete meter vault with a transducer style flowmeter, and several air vents. The controls for this pipeline will be outfitted with SCADA so that information on the system will be made available to be monitored by City of Visalia Staff back at the yard for the Public Works department as well as inside the Water Conservation Plant.

10.3.4.2.5 Subtask 9.5 – Tulare ID Water Reuse Pipeline

This work item will include furnishing and installing 10,300 feet of 60-inch RGRCP pipeline from a diversion from the Mill Creek Bypass Pipeline to Tulare ID's surface water delivery system. This pipeline will include several bends, a few road crossings, a concrete meter vault with a transducer style flowmeter, and several air vents. The construction of the crossing at Ave 272 is intended to be a jack-and-bore.

10.3.4.2.6 Subtask 9.6 – Low-Head Irrigation Pipeline South

This work item will include furnishing and installing 3,400 feet of 18-inch C905 PVC pipeline from a diversion from the new regulation basins and pump station to a connection with the Low-Head Irrigation Pipeline East. This pipeline will include several bends, a few road crossings, a concrete meter vault with a transducer style flowmeter, and several air vents.

10.3.4.2.7 Subtask 9.7 – Low-Head Irrigation Pipeline East

This work item will include furnishing and installing 17,350 feet of 18 to 36-inch C900 to C905 PVC pipeline from the diversion from the Low-Head Irrigation Pipeline South to the Visalia airport, the Golf Course, and adjacent farmed fields. This pipeline will include several bends, a few road crossings, a concrete meter vault with a transducer style flowmeter, and several air vents. The construction of the crossing at Highway 99 and the adjacent railroad is intended to be a jack-and-bore with a 51-inch steel carrier casing.

10.3.4.2.8 Subtask 9.8 – Construction Staking

Construction stakes would be provided by the City of Visalia's consultant to the contractor upon request near the edge of the pipeline or basin right-of-way, referencing a fixed design feature (i.e. centerline, inside toe of slope, inside hinge point, but not

slope stakes), at 100-foot intervals and at all beginning and ends of curves, on each side of the facility. Construction staking will also reference critical underground pipes and box culverts, and headwall and inlet/outlet structure locations. Also, cutsheets will be provided to contractors and/or the City of Visalia upon completion of each staking request, displaying stake locations and details.

10.3.4.2.9 Subtask 9.9 – Miscellaneous Engineering Services

Questions regarding specifications, design or consulting are common during construction activities. It is envisioned that City of Visalia staff will need to have the project engineer or his representative available to answer any questions as they arise. The project engineer understands that time is a critical element in order to complete all construction activities for the Project and that communication may be made available during all construction activities.

10.3.4.2.10 Subtask 9.10 – Performance Testing and Demobilization

Task 9.10.1 – Testing: Performance testing will vary for the work to be performed. Cylinder tests will be used to ensure the concrete meets specifications. Also, compaction testing is required to be performed on the levees to make certain minimum compaction requirements are met. All materials furnished will be inspected for compliance, and all pipelines will be pressure tested to check for leakage. SCADA sites will be inspected to make certain all materials invoiced are installed. Prior to project close out the contractor will be required to demonstrate that the facility operates as intended. In addition, the contractor will also need to prepare an operations manual for the City of Visalia that included program logic and product literature.

Task 9.10.2 – Demobilization: This work item includes the work to remove all trash or debris from the project site, complete all items on punch list from the final inspection; remove all equipment, fencing, project signs and temporary bathroom facilities and to process final payment of project retention and establish start date for project warranty.

10.3.5 Budget Category (e): Environmental Compliance/Mitigation/Enhancement

10.3.5.1 Task 10 – Environmental Compliance/Mitigation/Enhancement

Based on preliminary results shared by the CEQA compliance consultant for the project, the project will likely not impact Federal of State protected species or natural communities. However, this task has been developed to mitigate any potential

disturbance or impacts to protected species or communities. As previously discussed, the construction of the project's regulation basin will involve excavation of the floor of the basin and construction of earthen levees. Preventative measures will be used during construction to minimize potential impacts to wildlife, including:

- Vehicles should use slow speeds (<15 miles per hour), especially at night, when driving through or around the Project site to minimize potential for striking or disturbing animals. San Joaquin kit fox and other animals are vulnerable to collisions with autos.
- Open pipes and culverts should be inspected before being moved or altered to prevent wildlife from being injured or trapped.
- A pre-construction survey was performed to determine if there was a presence of the San Joaquin Kit Fox or the Swainson Hawk.
- If special status species are encountered during an inspection, they should be left alone to passively exit the area unless otherwise authorized by CDFG or USFWS.
- Any migratory birds and their nests should be not be disturbed as outlined in the Migratory Bird Treaty Act of 1918(MBTA). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations(CFR) Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21).
- If building or tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity should be conducted by a qualified biologist no more than 15 days before tree and building removal. If active nests are located within the construction site, nests should be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance should occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity should include the trees on-site, burrows and open buildings (house/garage and shed).

The City of Visalia will require that contractors monitor for cultural resources throughout the construction process. If during the course of the project construction, any archaeological or historical resources are uncovered, discovered or otherwise detected or observed, activities within 50 feet of the find shall be ceased.

This work item also includes the cost for implementation of the Dust Control Plan (DCP), and all revisions the District deems necessary to comply with all federal, state, and local air pollution laws and regulations; finalizing, submitting, and implementation of the Stormwater Pollution Prevention Plan (SWPPP), and all revisions the District deems necessary to comply with all federal, state, and local water pollution laws and regulations. Also included in this work item is the construction and maintenance of all of the facilities required to comply with the DCP and SWPPP; removal of the required facilities upon project completion; and shall include full compensation for providing all miscellaneous materials, incidentals, labor, tools and equipment and for doing all work involved as detailed in the Plans and Specifications, and complying with the DCP, SWPPP, and their respective subsequent revisions.

10.3.6 Budget Category (f): Construction Administration

10.3.6.1 Task 11 – Construction Administration

Prior to construction, City of Visalia staff will work with the contractor to verify that the material and equipment used in the construction of the pipeline and related facilities is consistent with applicable contract document requirements and that material suppliers are identified and approved. City of Visalia staff will work with the selected contractor to verify that the construction work was accomplished by the contractor as per the contract, that the contractor bills the City of Visalia appropriately for the work and that warranty over the work is established by date and honored until the agreed upon expiration date has passed. This work will be coordinated with the representative of the City of Visalia. If unforeseen circumstances are encountered by the contractor, City of Visalia staff will expeditiously work to make a determination whether the circumstance is a material change to the work described in the contract. If this is determined, the contractor shall be compensated for this change as per City of Visalia policy.

Construction Observation – The construction inspector will be required to make site visits to the Project site to check on the construction of facilities as per the intended design at critical times, be present at concrete pours to test concrete slump and verify truck tags, and be available for compaction tests. In general it is envisioned that on average four visits per week would be necessary, and that field reports would be generated for each visit.

Record Drawings – Changes to the original design would be catalogued through construction and documented through an as-built set of plans for the City of Visalia's records.

O&M Manuals and Monitoring Plan – All operation and maintenance manuals for equipment installed on the project shall be received from the contractor prior to the issuance of the Notice of Completion for the project and the release of the 10% retention to the contractor.

10.3.7 Budget Category (g): Other

10.3.7.1 Task 12 – Right-of-Way Acquisition

This task is envisioned to be completed prior to grant award in June 2011.

Task 12.1 – Alignment Property Title and Easement Research: Chain of Title Guarantees will be researched to establish the current owner, any person or entity that has impaired the current ownership, and all existing easements or restrictions on the project alignment properties. This work will be contracted through a local title company.

Task 12.2 – Alignment Property Appraisals: An appraiser will be retained by the City of Visalia to estimate the appraisal value for the lands that the City of Visalia wants to gain an easement across. The appraiser will take into account all of the project surveying, title and research information gathered as well as the physical condition of the properties to estimate the current value of project alignment properties.

Task 12.3 – Negotiating with Property Owners: A right-of-way acquisition consultant will be retained by the City of Visalia to negotiate with landowners for a construction and permanent facility operation and maintenance easement across their properties. This consultant will work with the City of Visalia's legal counsel to make reasonable offers to land owners and work toward willing easement acquisitions. Negotiations will also be made with the County of Tulare as a portion of the project alignment would be in County right-of-way for a few rural existing County roads. However, if successful negotiations appear to be impossible then the consultant will work with the City of Visalia's legal counsel in condemnation proceedings.

Deliverables to DWR – The City of Visalia will deliver the project's recorded easements and legal descriptions, the negotiated settlements with landowners, and appraisal information to DWR. These documents will be provided to DWR within 30 days of being finalized and received by the City of Visalia.

10.3.7.2 Task 13 – Walnut Tree Removal

This work task involves contracting for the local services of a company that removes the trees from existing orchards, grinds or chips up the trees, and removes the grounds or

ships from the project site. This would be accomplished for the new regulation basin area that is approximately 20 acres. If this method is followed then other special permitting will be required from the Central Valley Air Pollution Control District. This task is expected to be completed prior to grant award in June 2011.

10.4 Paregien Basin Project Tasks

10.4.1 Budget Category (a): Direct Project Administration Costs

10.4.1.1 Task 1 - Administration

Kaweah Delta WCD will administer the Paregien Basin Project and work to manage and account for all aspects of the project. Kaweah Delta WCD staff and consultants will undertake contracting for construction services and construction review for the project; will establish schedules and evaluate the quality of the project work accomplished. This effort will be regularly evaluated at monthly project meetings between the Project Manager, Kaweah Delta WCD staff working on the project, consultants working for Kaweah Delta WCD, and selected contractors. At these meetings progress during the previous month will be reviewed, issues in implementing the project will be discussed, and action items will be established for the next month.

Deliverables to DWR – Kaweah Delta WCD D will deliver monthly invoices of work accomplished to DWR. Within these reports pay requests from contractors, certified weekly payroll records, and verifications of prevailing wage compliance will be included.

10.4.1.2 Task 2 - Labor Compliance Program

Kaweah Delta WCD currently does not have a labor compliance program for either the District or for District projects accomplished by contractors. As part of the work in this category Kaweah Delta WCD will adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). In compliance with California Labor Code §1771.8, Kaweah Delta WCD's labor compliance program will be in place at the time of contract award for this submitted project.

As part of all work accomplished by Kaweah Delta WCD, either through contractor or by Kaweah Delta WCD staff, Kaweah Delta WCD standard practice is to verify prevailing wage rates for applicable personnel. In contracted situations, Kaweah Delta WCD requires that contractors and subcontractors to contractors submit weekly certified payroll. This information is then reviewed and compared to State prevailing wage rates to verify that the appropriate wages and benefits have been paid to employees working on Kaweah Delta WCD projects. For Kaweah Delta WCD employees, this is very rarely

an issue because Kaweah Delta WCD compensates their staff at higher than prevailing wage rates. However, whenever there is a construction project undertaken by Kaweah Delta WCD, these rates are verified by Kaweah Delta WCD's accounting staff to ensure that appropriate compensation is provided to employees and that Kaweah Delta WCD fully complies with all portions of the California Labor Code.

Another part of the Kaweah Delta WCD's standard practice is to verify that all contractors employed by Kaweah Delta WCD for construction projects are appropriately licensed by the State of California and are in good standing. According to Tulare County ordinance code, only a person licensed pursuant to the Business and Professions Code of the State of California to engage in well drilling who possess an active C-57 contractor's license would be contracted for the destruction of an abandoned well.

Further, before commencing work, the contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the following insurance in a company or companies acceptable to the District. All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include as additional insured: the Owner, the County, the State, the Federal Government, Provost & Pritchard Engineering Group, Keller/Wegley Consulting Engineers and their officers, employees, consultants and agents.

Additional requirements include:

1. Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed;
2. Employer's Liability Insurance in an amount of at least $5,000,000;
3. Comprehensive Liability Insurance with limits of:
   Bodily Injury, Property Damage and Personal Injury - $5,000,000 each occurrence, $5,000,000 aggregate.

   This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance.
4. Automobile Liability on an occurrence basis covering all owned, non-owned, and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $5,000,000 each occurrence; and
5. Builder's Risk Insurance is required.

These limits shall be considered sufficient for the contractor associated with this project, provided however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

Deliverables to DWR – Kaweah Delta WCD will deliver and submit the District's Labor Compliance Program to DWR. This program will be adhered to through the project in all dealings with the retained contractors and their personnel as well as Kaweah Delta WCD employees accomplishing portions of the project work. Also, all contracts signed by Kaweah Delta WCD for contracted services will be supplied to DWR for verification that they are consistent with the California Labor Code.

10.4.1.3 Task 3 - Reporting

Kaweah Delta WCD staff will undertake the reporting effort for the Paregien Basin Project and will work to provide required materials to DWR consistent with what is outlined in this grant application and with the contract that Kaweah Delta WCD will sign as proposing agency for this IRWM grant with the State of California. Reporting, accounting, and administration will regularly be evaluated at monthly project meetings between the Kaweah Delta WCD Project Manager, Kaweah Delta WCD staff working on the project, consultants working for Kaweah Delta WCD, and selected contractors. At these meetings progress, progress reports will be generated by the group that include site pictures of recent progress being made, and applicable construction logs will be included if available.

Kaweah Delta WCD will also generate reporting of project progress to the IRWM group and to the District's Board of Directors on a monthly basis.

Deliverables to DWR – Kaweah Delta WCD will deliver quarterly progress reports as well as annual and final reports to DWR for this project. Within these reports site pictures of progress will be included, applicable construction inspection logs, and project team meeting agendas and minutes.

10.4.2 Budget Category (b): Land Purchase/Easements

The Paregien Basin property was purchased by Kaweah Delta WCD in 2002. The project will occur completely within the existing lands owned by Kaweah Delta WCD. There are no purchases of land or easements currently envisioned in this project.

Deliverables to DWR – None

10.4.3 Budget Category (c): Planning/Design/Engineering/Environmental Documentation

10.4.3.1 Task 4 – Assessment and Evaluation

A portion of project planning and engineering has been accomplished to date. Efforts to secure project funding have been the project's focus for the last few years and so some general planning and design has been accomplished. The current project design is what would be considered a conceptual (10%) design and requires a significant amount of development before the project could be constructed by a contractor. There have been no significant efforts to narrow the design, but the District has a solid project concept that is only subject to the outcome of negotiations with Caltrans on water impounded against the subgrade of State Highway 198.

Task 4.1 – Water Right Investigation: The project would construct a new retention facility in the Deep Creek channel upstream of the City of Farmersville and would impact facilities of the Farmers Ditch Company. A technical study will be undertaken to evaluate the water rights of the Farmers Ditch Company in terms of compensation for lost seepage or potential necessary agreements to temporarily divert and store waters not owned by Kaweah Delta WCD. Recently, a similar investigation was undertaken for the development of Oakes Basin, which is Mill Creek (just northwest of this project location). The available information from that project will be applicable to this project.

Task 4.2 – Preliminary Biological Assessment: District staff would contract with local certified biological consultant to perform a preliminary biological assessment of the conceptual project at the proposed project site. Areas of sensitive habitat will be identified in an effort to protect them in later design efforts.

Task 4.3 – Paregien Basin Technical Study: Kaweah Delta WCD will need to determine the optimal balance of floodwater retention, groundwater recharge and conveyance capacity for the facility. To accomplish this, a technical project optimization study will be undertaken to assess and evaluate unresolved project issues prior to beginning final design and the generation of construction documents. This study is planned to be accomplished through a local civil engineering consultant that has significant regional study experience, has an existing knowledge of District facilities and priorities, and has successfully worked with District staff in the past.

Subtask 4.3.1 – Deep Creek Flow Range Research and Analysis: Research will need to be conducted to verify the range of potential flows through Deep Creek. Research will be conducted through the review of available flood studies on

Deep Creek, as well as Tulare County and City of Farmersville records of flooding events in Farmersville. Also, the local agency that manages surface water in the area, Consolidated Peoples Ditch Company, will be consulted and asked to provide input on the potential range of flows that could be experienced by the facility. The range of flows possible through the Project location will be analyzed in terms of the project facility, its potential flood damage prevention benefits, its potential groundwater recharge benefits, and its surface water throughput capabilities.

Subtask 4.3.2 – Recharge and Impoundment Analysis: This section of the technical report will analyze the groundwater recharge and floodwater layoff potential the project would have in different structure configurations or at varying structure heights. The analysis will involve survey information that was recently generated for the project and would determine the areas submerged by the new weir facility at varying heights. Given this information, potential flood water layoff capabilities of the facility would be analyzed through a coordinated effort between the City of Farmersville, Kaweah Delta WCD and Farmers Ditch Company. Further, this effort would investigate if the newly available storage could generate additional benefits to regional partners through coordinated operations. Monthly recharge estimates for the facility would be generated based on the estimated wetted area from the facility and recharge rates previously experienced at the project site from temporary bermed facilities.

Subtask 4.3.3 – Paregien Basin Geotechnical Investigation: An additional geotechnical investigation will be pursued to determine what material is recommended be used in the construction of the earthen levees, what soil properties that material needs to have, what levee geometry is necessary to provide a stable and reliable earthen levee, and what the likely long-term groundwater recharge rates the basin will likely have. The investigation will take into account the sensitive habitats identified in the Preliminary Biological Assessment and will evaluate the soil properties of various potential areas that could be used as borrow sites for the project's new earthen levees through soil borings and evaluations of geotechnical properties. Anticipated soil properties to be investigated at each location would include percent moisture, dry density, direct shear, particle size analysis, permeability, expansion index, Atterberg limits, specific gravity, consolidation, compaction curves, shear strength diagrams, and calculated CalTrans R values and a slope stability analysis.

Subtask 4.3.4 – Recommendation on Facility Design: Based on the analysis of the range of potential flows through the project site, recommendations will be made for the facility design (width of weir, height of structure, number of weir bays, inclusion of sluice gates or not, structural aspects that will reduce upstream and downstream erosion, depth of cutoff walls and trenches) so that water can be safely and efficiently managed both at low flows and also at flood release flows. Included in this technical report will be recommendations on how to accurately measure flows past this structure given the facility's water management capabilities. Consideration will be given to what potential impacts the height of water retention and facility operation would have on existing surface waters that are conveyed through Deep Creek. The potential for impounded water to seep or pipe around the structure will be analyzed and methods of protecting the structure from potential failures will be recommended. Sensitive habitat areas will be evaluated and potential protective design features will be recommended for the facility. Operational guidelines for the facility will be developed as a result of the coordinated analysis of benefits from regional water management agencies.

Subtask 4.3.5 – Estimate of Facility Cost: An Engineer's Opinion of Probable Cost has been generated for the recommended facility given recent construction costs in the area for similar work. This final cost will be compared to the available funding for the project and recommendations will be made on how to provide for any additional funding above what is allocated.

Deliverables to DWR – Kaweah Delta WCD will deliver the Water Rights Investigation, the Preliminary Biological Assessment, and the Paregien Basin Technical Study to DWR as technical studies conducted in support of the final project design. Four printed copies of each report will be provided to DWR as well as one digital copy containing all printed material in the report. These reports will be provided to DWR within 30 days of being finalized and accepted by Kaweah Delta WCD.

10.4.3.2 Task 5 – Final Design

Final Design has currently not been accomplished. The current project design is a conceptual (10%) design and requires additional investigation and development before the project could be constructed. Kaweah Delta WCD staff has contracted with a local Civil Engineering consultant to generate the final design for the new water control structure and the associated monitor wells for the Paregien Basin Project. The final design will include:

- Construction drawings developed and executed by a registered Civil Engineer in the State of California,
- Project specifications development and executed by a registered Civil Engineer in the State of California,
- Competitive bid solicitation documents, and
- Contract documents based on the District legal requirements.

Task 5.1 – Construction Drawings: Construction drawings will be developed for the new concrete weir structure, the new permanent flow gauging station, the new earthen levees that extend away from the concrete structure, the new metal catwalk that allows for safe management of flows when there is water in Deep Creek, and new monitor wells that will provide valuable information on the effectiveness of local groundwater recharge efforts.

The proposed facility would be designed to be safely operated within the range of flows presented in the Paregien Basin Technical Study and would take into account any sensitive habitat locations identified in the project's Preliminary Biological Assessment. Structural calculations would be accomplished under the direction of a registered Civil Engineer in the State of California in an effort to construct a concrete facility that will remain viable for 50 years or more.

Design for the earthen levees will determine where suitable materials can be obtained , and then safe and reliable water retention levees designed based on the identified soil properties at the planned borrow site. Construction drawings will contain a grading plan for the construction of project levees and cross-sections along the levees to convey levee geometry at stations along the facility alignment.

Construction drawings for the new metal catwalk over the concrete facility will reflect the designed safety elements that will allow for safe and reliable use of the facility for water management personnel when there are flows in the Deep Creek channel. The construction drawings will be consistent with OSHA requirements for this type of facility and will incorporate standard safety features for Kaweah Delta WCD ditchtenders for consistency with other District facilities.

Task 5.2 – Project Specifications: The following project specification sections are envisioned as necessary to be included in the contract documents:

- Section 02050 – Demolition;
- Section 02115 – Clearing and Grubbing;
- Section 02200 – Earthwork;
- Section 02232 – Aggregate Base;
- Section 02233 – Dewatering;

- Section 02272 – Rip Rap;
- Section 02503 – Storm Water Pollution Prevention Plan;
- Section 02504 – Dust Control;
- Section 02610 – Pipe and Fittings;
- Section 02640 – Valves and Appurtenances;
- Section 03300 – Cast-in-Place Concrete;
- Section 03600 – Grout;
- Section 03150 – Concrete Accessories;
- Section 05500 – Fabricated Metal;
- Section 05550 – Anchor Bolts and Expansion Anchors; and
- Section 11287 – Water Control Gates.

Each specification section will be developed for the work included in the project and will include a description of the work covered in each section, will reference applicable product and industry standards applicable to the work, will specify who is responsible for applicable safety plans; will outline the process of submitting product information to the project Engineer for acceptance, will outline quality assurance measures for the applicable work, will specify the acceptable procedures for installation of the specified work, will address plausible construction issues encountered during construction, and will define acceptable tolerances for the accomplished work.

Task 5.3 – Solicitation and Competitive Bid Documents: The following solicitation and competitive bid document sections are envisioned as necessary to be included in the contract documents:

- Section 00100 – Instructions to Bidders
- Section 00101 – Requests for Bids
- Section 00305 – Bidder's Checklist
- Section 00310 – Bidder's Proposal
- Section 00313 – List of Subcontractors
- Section 00314 – Material Suppliers Information
- Section 00315 – Preliminary Construction Schedule
- Section 00316 – Non-Collusion Affidavit
- Section 00317 – Public Contract Code Section 10162 Questionnaire on Disqualification
- Section 00318 – Public Contract Code Section 10232 Statement on Contempt
- Section 00324 – Worker's Compensation Certification
- Section 00329 – Labor and Other Code Requirements Certificate
- Section 00340 – Qualification Statement
- Section 00501 – Contract Agreement
- Section 00502 – Indemnity Agreement
- Section 00503 – Guaranty
- Section 00600 – Bond Requirements

- Section 00601 – Bid Bond
- Section 00603 – Performance Bond
- Section 00604 – Payment Bond
- Section 00675 – Notice of Award
- Section 00680 – Notice to Proceed
- Section 00701 – Dispute Resolution, Suspension and Termination
- Section 00900 – Cultural Resources
- Section 00910 – Threatened and Endangered Species Compliance

Each solicitation and competitive bid document section will be developed for the work included in the project and will outline the process that contractors must follow to submit a successful qualified bid for the project and what will be required if they are successfully selected. The solicitation and competitive bid documents address California labor code compliance, indemnity requirements, bonding throughout bidding and the project, how Kaweah Delta WCD will resolve disputes throughout the project, and commitments that the contractor will have to honor because of Kaweah Delta WCD findings regarding cultural resources and/or endangered species during CEQA proceedings.

Task 5.4 – Contract Documents: The following contract document sections are envisioned as necessary to be included in the contract documents:

- Section 01005 – Specifications
- Section 01011 – Description of the Work
- Section 01013 – Beginning of Work, Time of Completion, Liquidated Damages
- Section 01017 – Materials
- Section 01018 – Contractor's Responsibilities
- Section 01019 – Construction Stakes, Lines, and Grades
- Section 01022 – Changes to the Work
- Section 01025 – Measurement and Payment
- Section 01026 – Waiver and Release Submittals
- Section 01040 – Coordination of Work
- Section 01052 – Engineer's Status during Construction
- Section 01090 – Definitions and Abbreviations
- Section 01200 – Project Meetings
- Section 01300 – Submittal Procedures
- Section 01400 – Quality Control
- Section 01500 – Temporary Facilities
- Section 01502 – Protection of Underground Facilities and Survey Monuments
- Section 01630 – Product Substitutions
- Section 01700 – Contract Closeout

Each contract document section will be developed for the specifics of this project and will outline the administrative arrangements between the District and the contractor. The contract documents address the priority of the parts included in the contract documents if there are conflicts, what will be the penalties if work is not completed as per the agreed to schedule, measurement and payment arrangements for work performed, submittal procedures, product substitutions and necessary steps to close out the contract.

Deliverables to DWR – Kaweah Delta WCD will deliver project construction drawings signed by a registered Civil Engineer in the State of California, project specifications signed by a registered Civil Engineer in the State of California; Competitive bid solicitation documents, and project contract documents based on District Standards to DWR (four printed copies and one electronic copy). These documents will be provided to DWR within 30 days of being finalized and accepted by Kaweah Delta WCD.

10.4.3.3 Task 6 – Environmental Documentation

The project currently has no completed environmental documentation. The District has owned and managed the property for several years, so District staff members are well acquainted with the issues associated with the property. Given this familiarity, there is a general view by District staff that there will be no significant environmental issues to contend with through environmental documentation, but that these issues will be similar to the issues for most other District projects rather that something out of the ordinary.

Task 6.1 – Environmental Checklist and Biological Assessment: The District will contract with a local consultant to review the preliminary biological assessment for the conceptual project and update the assessment for the final design of the project. From this assessment the consultant will fill out an environmental checklist, providing reasons for the categories chosen. This documentation will be reviewed by District staff and a determination will be made as to the appropriate environmental document that will be recommended to be pursued for the project. Currently it is assumed that a Mitigated Negative Declaration will be the most extreme to be pursued for this project.

Task 6.2 – Development of CEQA Documentation – The District will contract with a local consultant to review the updated biological assessment and environmental checklist for the project and aid the District in developing what is currently assumed to be, at the extreme, a Mitigated Negative Declaration for the project. The project will be evaluated in detail on how it impacts local Agricultural Resources, Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Quality, Noise, Population and Housing, and Transportation and Traffic. This information and analysis will be

summarized in an Initial Study. Then a draft CEQA document will be developed and reviewed by District staff. Once District staff is satisfied with this document, it will be reviewed by DWR. Once DWR is satisfied with this draft document it will be considered the final draft. Copies of the final draft will be prepared for circulation to responsible agencies and the public through the state clearinghouse and other District specific locations for public review. A list of responsible agencies will be developed by the District that will be noticed as to the availability of environmental documentation for the project. A Notice of Intent will be developed for the project and will be posted as per District CEQA guidelines and distributed with copies of the final draft for review and comment. CEQA documentation will be distributed to the state clearinghouse with the standard number of copies for distribution, specific copies will be distributed to local responsible agencies; copies will be distributed to the County Clerk's office and a public library as well as one to be held at the District office for public review.

Task 6.3 – Final CEQA Documentation: All comments on the draft final CEQA documentation will be collected and reviewed. Responses to the comments received will be drafted by the District's consultant and reviewed by District staff. These responses to comments, along with the draft final environmental documentation will be reviewed and considered by the KCWD Board of Directors and, given that they agree with the responses, will pass a resolution accepting the environmental documentation. The resolution will authorize the District Manager to file a Notice of Determination for the project with the State Clearinghouse and the County Clerk and to pay the applicable County fees.

Deliverables to DWR – Kaweah Delta WCD will work with DWR to deliver draft CEQA documentation for DWR staff review and comment prior to the District's distribution of CEQA documents to other responsible agencies. Approved and adopted CEQA documentation, including the environmental checklist and biological assessment, Initial Study, the Notice of Intent adopt the CEQA documentation, proof of transmittal to the state clearinghouse, all received comment letters from responsible agencies and members of the public, responses to issues brought up in the public review process, the resolution accepting the finalized documentation and instructing the District manager to file the Notice of Determination with the county clerk and the state clearinghouse, will be provided to DWR in printed and electronic versions within 30 days of being finalized and accepted by Kaweah Delta WCD.

10.4.3.4 Task 7 – Permitting

The project currently has no permitting accomplished. A temporary diversion facility is in place in the location where the new concrete water retention structure will be

constructed. It appears, however, that permits for the construction of the facility will be necessary from the California Department of Fish and Game, the Army Corps of Engineers, the Regional Water Quality Control Board, the Air Resources Board, and the Farmers Ditch Company.

Task 7.1 – California Dept of Fish and Game Streambed Alteration permit (1602): As the project will be the construction of a facility in what has been determined to be a streambed under the jurisdiction of the California Dept of Fish and Game (Deep Creek), a Streambed Alteration Permit will be required for the construction of the project. Kaweah Delta WCD will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during development of the environmental documentation. Then Kaweah Delta WCD staff and consultants will work with staff from the California Dept of Fish and Game to work out any potential issues in the permitting so that a successful permit can be issued for the construction. It is understood that the California Dept of Fish and Game will not issue the permit until CEQA documentation is formally adopted by Kaweah Delta WCD, as the issuance of the permit is a formal action by the California Dept of Fish and Game that requires CEQA compliance. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.2 – Army Corps of Engineers Permit for Section 404 of the Clean Water Act: As the project construction of a facility will involve earthwork within a channel that has been determined to be under the jurisdiction of the Army Corps of Engineers (Deep Creek), a Section 404 Permit will be required for the construction of the project. Kaweah Delta WCD will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during development of the environmental documentation. Then Kaweah Delta WCD staff and consultants will work with staff from the Army Corps of Engineers to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the Army Corps of Engineers. Kaweah Delta WCD will apply for a nationwide permit, which is a more readily available type of permit from the Army Corps of Engineers which does not require NEPA compliance prior to the Army Corps of Engineers issuing the permit. Requirements of this permit will be incorporated into the construction documents for the project.

Task 7.3 – Stormwater Pollution Prevention Permit from the Regional Water Quality Control Board: As the project construction of the facility will likely disturb more than 1.0 acre of area it is it is anticipated that SWPPP Permit from the RWQCB will be required for the construction of the project. Kaweah Delta WCD will work with local consultants

to generate the permit application based on project information from the final design and the Initial Study developed during development of the environmental documentation. Then Kaweah Delta WCD staff and consultants will work with staff from the RWQCB to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the RWQCB. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.4 – Dust Control Plan with the Air Resources Board: Given the anticipated amount of earthmoving involved in the construction of the project, it is it is anticipated that a DCP will be required from the Air Resources Board. Kaweah Delta WCD will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during environmental documentation. Then Kaweah Delta WCD staff and consultants will work with staff from the Air Resources Board to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the RWQCB. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.5 – Well Driller's Permit: As per Section 4-13-1245 of the Tulare County Ordinance Code, a permit from the County of Tulare is required for the construction of a well. Application for this permit shall be made to the Health Officer. Such application shall be on forms furnished by the Health Officer and shall provide all information pertaining to the project required by the Health Officer. Every application shall be signed by the owner or his authorized designee. The Health Officer may prescribe conditions if he determines that they are required to prevent contamination or pollution of underground waters. Permit conditions are appealable pursuant to section 4-13-1275 of this Article. A well permit shall be valid for six (6) months from the date of issuance.

Task 7.6 – Farmers Ditch Company: As noted in Task 4.1, it will be necessary to investigate the water rights on Deep Creek and work with Farmers Ditch Company to establish acceptable agreements for the compensation for lost seepage, and the potentially necessary agreement to temporarily divert and store waters not owned by Kaweah Delta WCD. This set of agreements with Farmers Ditch Company is not viewed as permits, but none-the-less will be necessary for the project to succeed. For this reason this effort is included in this category. Kaweah Delta WCD will work with local consultants and with Consolidate Peoples Ditch Company to accomplish mutually beneficial agreements on the operation of the project facility. It is understood that the agreement will not become official until CEQA is formally adopted by Kaweah Delta WCD, as the agreement is a formal action by both Districts that requires CEQA compliance.

Deliverables to DWR – Kaweah Delta WCD will deliver project permits from the California Department of Fish and Game, the Army Corps of Engineers, the Regional Water Quality Control Board, the Air Resources Board, Tulare County and Farmers Ditch Company to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Kaweah Delta WCD.

10.4.4 Budget Category (d): Construction/Implementation

10.4.4.1 Task 8 – Construction Contracting and Deliverables

There has been no construction contracting work accomplished for the project to date. The project design is in the development stages and is only developed to a 10% design. The tasks listed below will be accomplished as part of the project after it was selected for grant funding.

Task 8.1 – Publish Notice to Bidders: A notice to bidders will be published in a local newspaper publication on the same day of the week for three successive weeks. This notice will provide the official title for the project and briefly describe the worked sought from bidding contractors. It will also present the location where bids shall be submitted as well as the date and time when bids will be publicly opened and read. The notice will describe the required conditions of the bid packet for acceptance and will describe the required mandatory pre-bid meeting's date, time and place. The notice shall describe where bidding condiments can be acquired and how much they will cost. Further the notice shall describe to bidders that prevailing wages will be required for the job, that a bidder's bond in the amount of 10% of the base bid is required and the required contractor's license classification for the project.

Task 8.2 – Pre-Bid Meeting and Addendum No. 1: As part of the public bid solicitation process, the District will conduct a mandatory pre-bid meeting with interested contractors to go over information in the construction documents and answer questions submitted by contracts. An attendance list will be generated for the meeting and detailed minutes will be taken of all discussions during the meeting. The attendance list from this meeting, the questions asked at this meeting and the responses to these questions will be summarized in one document that will become Addendum Number One to the Contract Documents and will be distributed to all plan holders and contractors that were present at the pre-bid meeting.

Task 8.3 – Bid Opening and Bid Evaluation: An attendance sheet will be kept for the bid opening. The project engineer, his representative or the District engineer will keep the official clock as to when the time for acceptable bid submittals has passed. After

that time has been declared, all submitted bids will be collected, will be opened and the submitting contractor and total bid amount and will be read aloud to those present. Then this meeting will be closed and the project engineer, his representative or the District engineer will begin evaluating the submitted bids. The contractor's license, the bond amounts, the bond rating of the issuing company, the insurance and the contractor's history of claims, the math involved in the bid proposal, the preliminary project schedule, the subconsultants listed, similar project experience, listed references, as well as the certifications and required forms will all be checked against what was required in the contract documents. A summary of this evaluation of bids will be generated for the District staff and the Board of Directors to consider.

Task 8.4 – Bid Award: After the selection of the successful bidder for the project by the District's Board of Directors, project engineer, his representative or the District engineer will prepare the Notice of Award for submittal to and signature from the selected contractor. The project engineer, his representative or the District engineer will work to issue and have signed all remaining documents within the contract and review, receive and verify all project bonding and comment and eventually approve all product submittals and submitted plans. Prior to the contractor moving any equipment to the site, it will be re-visited by the biological consultant to verify that conditions have not changed since it was originally evaluated. Also a flier will be produced for the contractor regarding any cultural resource or sensitive species issues that need to be kept in mind during construction and regularly checked. After this is accomplished, the project engineer, his representative or the District engineer will issue the Notice to Proceed. This notice will officially begin the contractor's allowable timeframe for the construction of the facility.

Deliverables to DWR – Kaweah Delta WCD will deliver the project's advertisement for bids from a local publication, the agenda and minutes from the pre-bid contractors meeting, information regarding the evaluation of bids submitted to the District, and information and documentation on the award of all construction contracts to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Kaweah Delta WCD.

10.4.4.2 Task 9 – Construction

There has been no construction work accomplished for the project to date. The project design is currently in progress and is developed to a 30% design. The tasks listed below would be accomplished as part of the project after it is selected for grant funding.

10.4.4.2.1 Subtask 9.1 – Mobilization and Site Preparation

Subtask 9.1.1 – Mobilization: This work task will include the mobilization for all demolition, construction and site work authorized under the construction contract and all necessary equipment and materials to the project site. Once mobilization has begun, the contractor will assume responsibility for project site security. This work item also includes obtaining the required insurance and securing all necessary licenses, permits, preparations of plans, and paying any potential permit fees for the entire project. This work task will also include contacting Underground Services Alert for a review and marking of the project site for existing utilities.

Subtask 9.1.2 – Worker Protection: This work item includes provisions for protection of workers from any hazards that may occur during execution of the work at all times, including but not limited to weekends, holidays, and non-working hours. This work item will include providing, as necessary, all shoring, sheeting and bracing for trench and excavation stabilization and safety.

Subtask 9.1.3 – Miscellaneous Facilities and Operations: This work item includes provisions for de-watering, maintaining drainage, traffic control, construction and removal of temporary security fencing, construction of staging areas, protection of existing facilities, general project clean up, and all costs for miscellaneous work shown and described in the Contract documents that is not included in other work items. Also this work item includes provision of all necessary facilities for the contractors employees to work on-site in compliance with State labor Code, such as portable bathroom facilities.

Under this work item, temporary earthen berms will be constructed around the portion of the project site that is located in the Deep Creek channel to prevent any incidental drainage in the Creek from running into the work area.

10.4.4.2.2 Subtask 9.2 – Project Construction

Task 9.2.1 – Demolition: There is an existing temporary structure on the project site that will need to be demolished and removed prior to the construction of the new concrete weir structure. The existing temporary structure is comprised of compacted earthen material and will be removed with either an excavator and/or loader. This work item will be paid on a cubic-yard basis, but is planned to be listed in the bid schedule as a final pay quantity item. If the material from the temporary facility is suitable to be used as embankment material for the new levees, it will be stockpiled for later use in a predefined project stockpile location.

Task 9.2.2 – Construction Staking: Construction stakes will be provided by the District's consultant to the contractor upon request near the edge of the canal right-of-way, referencing a fixed design feature (i.e. centerline, inside toe of slope, inside hinge point, but not slope stakes), at 100-foot intervals and at all beginning and ends of curves, on each side of the structure and wings. Construction staking will also reference critical underground pipes and box culverts and headwall and inlet/outlet structure locations. Also, cut sheets will be provided to contractors and/or the District upon completion of each staking request, displaying stake locations and details.

Task 9.2.3 – Miscellaneous Engineering Services: Questions regarding specifications, design or consulting are common during construction activities. It is envisioned that District staff will need to have the project engineer or his representative available to answer any questions as they arise. The project engineer understands that time is a critical element in order to complete all construction activities for the Project and that communication may be made available during all construction activities.

Task 9.2.4 – Concrete Weir Construction: This work task will include the construction of the concrete water control structure that will be the centerpiece of this project. The area for the new concrete structure will first be cleared and grubbed area of any vegetation or unsuitable material. Then once the project site is suitable to begin work, the structural footings for the concrete structure's walls will be excavated. The subgrade or bottom of these areas will be over-excavated and compacted consistent with the required relative compaction called for in the project drawings. After this is accomplished, wooden forms for the concrete footings will be built as per the dimensions and elevations on the construction plans. Then horizontal and vertical rebar will be located within the footings, and tied in place so that it can be reviewed by the engineer or the engineer's representative prior to pouring concrete. After the rebar is inspected and confirmed to conform to the construction plans, concrete will be poured into the footing forms, vibrated to avoid air pockets and finished as per the project specifications. After the compression test results are received and confirmed as acceptable for the concrete footings and at least seven days have passed since the concrete pour, the wooden forms around the footings will be stripped and any minor patch work necessary to finish the edges of the footings will be undertaken.

This same process will then begin again for the concrete floor of the structure and then the vertical walls of the structure. For the vertical pier walls that form the weir bays for this structure, fabricated channel sections will be attached to the reinforcing steel in the wall and placed on the outside edge of the wooden forms. These fabricated channels

will become the guides for the removable weir boards used in the structure for water management and control.

Task 9.2.5 – Metal Catwalk Construction: A four foot wide metal catwalk is to be constructed on the top of the next concrete structure to provide a way for ditchtenders to safely access and modify the adjustable weir bay gate(s) while water is flowing in Deep Creek. The metal catwalk will be constructed from a frame of fabricated steel sections with expanded metal grating used as the deck of the catwalk. OSHA compliant (42-inch high) hand rails made of ¾-inch steel pipe will be constructed and securely fixed to the exterior metal sections of the catwalk. The fabricated metal frame of the catwalk will be attached to the supporting concrete pier and end walls so that expansion and contraction of the metal beams will not deflect or stress the concrete walls. All fabricated metal sections and the expanded metal decking will be painted for corrosion resistance. The hand rails will be made of stainless steel pipe and couplings. Bolted connections will be made with stainless steel bots and connections may also be made with welds.

Task 9.2.6 – Water Control Gate Construction: This task will include work to furnish and install any water control gates designed as part of the new concrete structure. It is very likely that a water level controlled radial gate will be included in the new concrete structure design so that large fluctuations in the water level in Deep Creek can be responded to quickly based on the operational criteria determine by Kaweah Delta WCD, Farmers Ditch Company and the City of Farmersville. The control gate will contain water level sensors that will measure upstream and downstream water level to within a half inch. In the future a programmable internal processor will allow site operators to adjust the operational parameters of the gate.

Task 9.2.7 – Gauging Station Construction: A permanent gauging station for the new structure will be fabricated and installed in this work task. A corrugated metal housing and standpipe will be attached to the concrete end walls on one side of the structure, both on the upstream and downstream side. Conduits will be run from the corrugated standpipe out along the concrete structure floor to near the middle of the channel. This conduit will be used to establish the water surface that is reflected in the stand. Water level sensing float equipment will be installed in the corrugated housings with a data collection module that is designed for reliable collection of readings in remote locations.

Task 9.2.8 – New Earthen Berms: This work item includes the work to construct the above-ground embankments for all sections of the project as noted on the construction plans. Typical dimensions for the new earthen berms are anticipated to be a 20-feet

wide access road at the top of the berm with 3 to 1 side-slopes on both up and downstream sides. The new earthen embankments will vary in height from zero to approximately ten feet above the existing ground surface. These embankments will be constructed from available fill material and will be compacted. Suitable fill material will be excavated by the contractor from predetermined borrow sites near the project. It is anticipated that 3,000 cubic yards of excess material may be encountered in the effort to excavate suitable material for the construction of the new earthen embankments. This material will be moved to predetermined stockpile areas, which will be close by. For this volume, since the material can be easily delivered using large earthmoving equipment, no haul quantity will be listed separately.

It will be the contractor's responsibility to arrange for a local source of construction water to be obtained (nearby willing well owner or metered fire hydrant in Farmersville). The contractor will be responsible to over-excavate the alignment of the new berms (Clear and grub area for the new construction) and compact the subgrade to the required relative density and moisture level. Fill material will be imported from specified borrow locations, placed in lifts no thicker than 8-inches, depending on soil properties, and compacted to the required relative density. Compaction tests will be required for each placed and compacted lift to verify that the required density and moisture level have been met. The new earthen berms are to be shaped to the specified slopes, grade and alignment as per the project construction documents.

Large rip-rap will be placed on the upstream and downstream side of the new earthen levee as erosion protection from wave action and potential overtopping. Rip-rap will be placed on the berms side slopes and worked into the bank. The access road over the new earthen berm will have rock placed on it to provide a more stable access road during rain periods.

Task 9.2.9 – Monitor Well Construction: This work task will construct two shallow monitor wells at Paregien Basin site. The monitor wells will be drilled by a qualified well driller with experience in construction of monitor wells. It is anticipated that the following requirements will be included,

- Experience – The Contractor shall have at least 5 years experience in drilling wells to depths of at least 100 feet using the drilling, construction and development methods as specified.
- License – The well driller must possess a current C-57 Well Drillers License, valid in the State of California.

The drilling will be performed in Tulare County and the Contractor shall obtain well drilling permits (as noted in Task 7.5) from Tulare County, and shall report the results of

the drilling to the California Department of Water Resources. A well completion report will be filed with the California Department of Water Resources.

During drilling, the borehole cuttings will be logged and classified in accordance with the Unified Soil Classification System. Well log information will include date of drilling, type of drill rig, type and diameter of drill bit, type of fluid additives, and depth of boring. Monitoring zones and appropriate well screen intervals will be identified.

Each monitor wells shall be drilled as an 8-inch hole and fitted with a 6-inch diameter, PVC casing, with slots made to allow water to enter the casing. A sanitary seal shall be installed on each monitor well, and an above-ground lockable housing shall be constructed. This housing shall be made of metal and shall be painted for corrosion protection.

Task 9.2.10 – Construction Inspection: The construction inspector will be required to make site visits to the Project site to check on the construction of facilities as per the intended design at critical times, be present at concrete pours to test concrete slump and verify truck tags, and be available for compaction tests. In general it is envisioned that on average two visits per week would be necessary, and that field reports would be generated for each visit.

Task 9.2.11 – As-Built Drawings: Changes to the original design would be catalogued through construction and documented through an as-built set of plans for the District's records. As-built drawings shall be completed for the concrete weir structure, the metal catwalk, the control gate, the gauging station, the earthen berms and the new monitor wells.

10.4.4.2.3 Subtask 9.3 – Performance Testing and Demobilization

Task 9.3.1 – Concrete Test Cylinders: Compression test cylinders will be taken for each load of concrete used in the new structure for 3-day, 7-day, 21-day and 28-day tests. These cylinders will be sampled by the engineer or the engineer's representative and will be delivered to a qualified testing local laboratory for testing to verify that the concrete meets the compressive strength requirements detailed in the project specifications and on the construction plans.

Task 9.3.2 – Compaction Tests and Compaction Curves: This work item includes the work to test in place density of compacted soils through all sections of the new berms and for the new concrete structure as noted on the Plans. Compaction testing will be

accomplished on each compacted lift at minimum intervals of 50 feet. Compaction tests will be logged and submitted to the District for review daily.

Task 9.3.3 – Demobilization: This work item includes the work to remove all trash or debris from the project site, complete all items on punch list from the final inspection; remove all equipment, fencing, project signs and temporary bathroom facilities and to process final payment of project retention and establish start date for the project warranties.

10.4.5 Budget Category (e): Environmental Compliance/Mitigation/Enhancement

10.4.5.1 Task 10 – Environmental Compliance/Mitigation/ Enhancement

Based on preliminary results shared by the CEQA compliance consultant for the project, the project will likely not impact Federal of State protected species or natural communities. However, this task has been developed to mitigate any potential disturbance or impacts to protected species or communities. As previously discussed, the construction of the project's regulation basin will involve excavation of the floor of the basin and construction of earthen levees. Preventative measures will be used during construction to minimize potential impacts to wildlife, including:

- Vehicles should use slow speeds (<15 miles per hour), especially at night, when driving through or around the Project site to minimize potential for striking or disturbing animals. San Joaquin kit fox and other animals are vulnerable to collisions with autos.
- Open pipes and culverts should be inspected before being moved or altered to prevent wildlife from being injured or trapped.
- A pre-construction survey was performed to determine if there was a presence of the San Joaquin Kit Fox or the Swainson Hawk.
- If special status species are encountered during an inspection, they should be left alone to passively exit the area unless otherwise authorized by CDFG or USFWS.
- Any migratory birds and their nests should be not be disturbed as outlined in the Migratory Bird Treaty Act of 1918(MBTA). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations(CFR) Part 10, including feathers or other parts,

nests, eggs or products, except as allowed by implementing regulations (50 CFR 21).

- If building or tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity should be conducted by a qualified biologist no more than 15 days before tree and building removal. If active nests are located within the construction site, nests should be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance should occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity should include the trees on-site, burrows and open buildings (house/garage and shed).

Another mitigation measure requires the District to monitor for cultural resources throughout the construction process. If during the course of the project construction, any archaeological or historical resources are uncovered, discovered or otherwise detected or observed, activities within 50 feet of the find shall be ceased.

This work item includes the cost for implementation of the Dust Control Plan (DCP), and all revisions the Contractor, District, and/or regulating authority deem necessary to comply with all federal, state, and local air pollution laws and regulations; finalizing, submitting, and implementation of the Stormwater Pollution Prevention Plan (SWPPP), and all revisions the Contractor, District, and/or regulating authority deem necessary to comply with all federal, state, and local water pollution laws and regulations. Also included in this work item is the construction and maintenance of all of the facilities required to comply with the DCP and SWPPP; removal of the required facilities upon project completion; and shall include full compensation for providing all miscellaneous materials, incidentals, labor, tools and equipment and for doing all work involved as detailed in the Plans and Specifications, and complying with the DCP, SWPPP, and their respective subsequent revisions.

10.4.6 Budget Category (f): Construction Administration

10.4.6.1 Task 11 – Construction Administration

Prior to construction, District staff will work with the contractor to verify that the material and equipment used in the construction of the new water control structure is consistent with applicable contract document requirements and that material suppliers are identified and approved. District staff will work with the selected contractor to verify that the construction work is accomplished by the contractor as per the contract, that the

contractor bills the District appropriately for the work and that warranty of the work is established by date and honored until the agreed upon expiration date has passed. This work will be coordinated with the representative of the District. If unforeseen circumstances are encountered by the contractor, District staff will expeditiously work to make a determination whether the circumstance is a material change to the work described in the contract. If this is determined, the contractor shall be compensated for this change as per District policy.

10.5 Oakes Basin Habitat Enhancement Project Tasks

10.5.1 Budget Category (a): Direct Project Administration Costs

10.5.1.1 Task 1 - Administration

The City of Visalia and Kaweah Delta WCD will administer the Oakes Basin Enhancement Project and work to manage and account for all aspects of the project. Kaweah Delta WCD staff will take the lead in contracting for construction services and construction review for the project, but both parties will have equal influence over service provider selection and the establishment schedules and evaluation of the quality of the project work accomplished. This coordination will take place through monthly project meetings between the project's implementing agencies. At these meetings progress over the previous month will be reviewed, issues in implementing the project will be discussed and action items will be established for the next month.

Deliverables to DWR – The City of Visalia and Kaweah Delta WCD will deliver monthly invoices of work accomplished to DWR. Also, quarterly progress reports will be made to DWR, as well as annual reports. Within these reports site pictures of progress will be included, applicable construction inspection logs, pay requests from contractors, certified weekly payroll records, verifications of prevailing wage compliance and project team meeting agendas and minutes.

10.5.1.2 Task 2 - Labor Compliance Program

Kaweah Delta WCD currently does not have a labor compliance program for either the District or for District projects accomplished by contractors. As part of the work in this category Kaweah Delta WCD will adopt and enforce a labor compliance program pursuant to California Labor Code §1771.5(b). It should be noted that this effort for Kaweah Delta WCD has already been included in the effort described for the Paregien Basin project. However, in compliance with California Labor Code §1771.8, Kaweah

Delta WCD's labor compliance program will be in place at the time of contract award for this submitted project.

As part of all work accomplished by the District, either through contractor or by District staff, the District standard practice is to verify prevailing wage rates for applicable personnel. In contracted situations, the District requires that contractors and subcontractors to contractors submit weekly certified payroll. This information is then reviewed and compared to State prevailing wage rates to verify that the appropriate wages and benefits have been paid to employees working on District projects. For District employees, this is very rarely an issue, because the District compensates their staff at higher than prevailing wage rates. However, whenever there is a construction project undertaken by the District, these rates are verified by the District's accounting staff to ensure that appropriate compensation is provided to employees and that the District fully complies with all portions of the California Labor Code.

Another part of the District's standard practice is to verify that all contractors employed by the District for construction projects are appropriately licensed by the State of California and are in good standing. According to Tulare County ordinance code, only a person licensed pursuant to the Business and Professions Code of the State of California to engage in well drilling who possess an active C-57 contractor's license would be contracted for the destruction of an abandoned well.

Further, before commencing work, the contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the following insurance in a company or companies acceptable to the District. All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include as additional insured: the District, the County, the State, the Federal Government, Provost & Pritchard Engineering Group, Keller/Wegley Consulting Engineers and their officers, employees, consultants and agents.

Additional requirements include:

1. Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed;
2. Employer's Liability Insurance in an amount of at least $1,000,000.
3. Comprehensive Liability Insurance with limits of:
   Bodily Injury, Property Damage and Personal Injury - $1,000,000 each occurrence, $1,000,000 aggregate.

This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance;

4. Automobile Liability on an occurrence basis covering all owned, non-owned and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $1,000,000 each occurrence; and

5. Builder's Risk Insurance is required.

These limits shall be considered sufficient for the contractor associated with this project, provided, however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

Deliverables to DWR – Kaweah Delta WCD will deliver submit the District's Labor Compliance Program to DWR. This program will be adhered to through the project in all dealings with the retained contractors and their personnel as well as District employees accomplishing portions of the project work. Also, all contracts signed by Kaweah Delta WCD for contracted services will be supplied to DWR for verification that they are consistent with the California Labor Code.

10.5.1.3 Task 3 – Reporting

Kaweah Delta WCD staff will undertake the reporting effort the Oakes Basin Habitat Enhancement Project and will work to provide required materials to DWR consistent with what is outlined in this grant application and with the contract that Kaweah Delta WCD will sign as proposing agency for this IRWM grant with the State of California. Reporting, accounting, and administration will regularly be evaluated at monthly project meetings between the Project Manager, Kaweah Delta WCD staff working on the project, representatives of the City of Visalia, consultants working for Kaweah Delta WCD, and selected contractors. At these meetings progress, progress reports will be generated by the group that include site pictures of recent progress being made, and applicable construction logs will be included if available.

Kaweah Delta WCD will also generate reporting of project progress to the IRWM group and to the District's Board of Directors on a periodic basis. Consistent with this provision, the City of Visalia will generate reporting of the project progress to the Visalia Council.

Deliverables to DWR – Kaweah Delta WCD will deliver quarterly progress reports as well as annual reports to DWR for this project. Within these reports site pictures of progress will be included, applicable construction inspection logs and project team meeting agendas and minutes.

10.5.2 Budget Category (b): Land Purchase/Easements

The Oakes Basin property was purchased by Kaweah Delta WCD early this decade. The project will occur completely within the existing lands owned by Kaweah Delta WCD. There are no purchases of land or easements currently envisioned in this project.

10.5.3 Budget Category (c): Planning/Design/Engineering/Environmental Documentation

10.5.3.1 Task 4 – Assessment and Evaluation

A portion of project planning and engineering has been accomplished to date. Efforts to secure project funding have been the project's focus for the last few years as much of the planning and design has already been accomplished. The current project design is what would be considered a partial (60%) design and a small amount of development is required before the project could be constructed. A habitat vegetation plan for the existing Oakes Basin has already been developed and will be implemented in the construction work items covered under Task 7.

Task 4.1 – Oakes Basin Biological Review: Kaweah Delta WCD investigated the conditions at Oakes Basin prior to its construction several years ago and found through a mitigated negative declaration that the construction and ongoing impacts of the project were minimal. It has been several years, however, since that investigation and determination was made. It is suspected that since Kaweah Delta WCD has maintained and operated the facility since its construction, there are no new environmental issues to be discovered at the location. Out of an abundance of caution, however, a biological assessment will be conducted in anticipation of processing a categorical exclusion for the construction of the new well and the planting of the habitat enhancement vegetation.

Task 4.2 – Irrigation Well Capacity Estimate: The remaining assessment and evaluation work item is the need to determine the capacity of the proposed irrigation well so as to direct the design and bid package. To accomplish this, the plants shown in the habitat vegetation plan will be reviewed and quantified for irrigated demand. Involved in this demand estimate will be estimates for evapotranspiration and irrigation efficiency.

Given the size of the habitat enhancement vegetation area, however, it is anticipated that a very small irrigation well or a normal sized domestic style well with a submersible pump will be adequate for the total peak irrigation demand. This analysis will be developed by Kaweah Delta WCD's engineering consultant. This consultant is very familiar with these kinds of estimates and sizing irrigation wells in this area. It is anticipated that this effort will be reported in a technical memorandum on the capacity of the irrigation well to Kaweah Delta WCD and the City of Visalia staff.

Deliverables to DWR – Kaweah Delta WCD will deliver the Oakes Basin Biological Review, the Irrigation Well Capacity Estimate and technical memorandum to DWR as technical studies conducted in support of the final project design. Four printed copies of each report will be provided to DWR as well as one digital copy containing all printed material in the report. These reports will be provided to DWR within 30 days of being finalized and accepted by Kaweah Delta WCD.

10.5.3.2 Task 5 – Final Design

Final Design has currently not been accomplished. The current project design is what would be considered a partial (60%) design and requires a small amount of development before the project could be constructed. A habitat vegetation plan for the existing Oakes Basin has already been developed and will be implemented in the construction work items covered under Task 7. Final Design work items described in Task 5 will be accomplished by Kaweah Delta WCD's Civil Engineering consultant. Final design will be pursued for a new irrigation well for the habitat enhancement vegetation and an associated irrigation system for the habitat enhancement area. The final design will include:

- Construction drawings developed and executed by a registered Civil Engineer in the State of California,
- Project specifications developed and executed by a registered Civil Engineer in the State of California,
- Competitive bid solicitation documents, and
- Contract documents based on the District's legal requirements.

Task 5.1 – Construction Drawings: Construction drawings will be developed for the new irrigation well and the associated irrigation system for the habitat enhancement area. The new irrigation well will be designed to safely and reliably produce the required total irrigation flows estimated in the technical memorandum for the new irrigation well capacity. The design of this well would take into account any sensitive habitat locations identified in the project's biological review. Design calculations would be accomplished

under the direction of a registered Civil Engineer in the State of California in an effort to construct a facility that will remain viable for 30 years or more.

Design for the drip or bubbler irrigation system will take into account the existing facilities at the basin, will ensure that the stability of the existing basin levees is in no way compromised, will include a sufficient factor of safety to ensure more than adequate flow capacity to all areas of the enhanced habitat vegetation plantings and will provide sufficient coverage to allow for future habitat development efforts to replant or expand planned areas in the future. Construction drawings will contain the alignment and elevation information for irrigation headers, flexible above-ground irrigation tubing, control valves, air release valves, and irrigation emitters or bubblers. Sizes (mostly being pipe diameters) will be called out for all facilities and required pressure ratings will be specified. Irrigation emitters or bubblers capable of delivering the necessary irrigation flow to each type of plan in the enhanced vegetation plan will be specified in the construction drawings and clearly shown.

Task 5.2 – Project Specifications: The following project specification sections are envisioned as necessary to be included in the contract documents:

- Section 02115 – Clearing and Grubbing;
- Section 02200 – Earthwork;
- Section 02233 – Watering;
- Section 02503 – Storm Water Pollution Prevention Plan;
- Section 02504 – Dust Control;
- Section 02610 – Pipe and Fittings;
- Section 02640 – Valves and Appurtenances;
- Section 02670 – Water Well Drilling;
- Section 03600 – Grout;
- Section 03150 – Concrete Accessories.

Each specification section will be developed for the work included in the project and will include a description of the work covered in each section, will reference applicable product and industry standards applicable to the work, will specify who is responsible for applicable safety plans; will outline the process of submitting product information to the project Engineer for acceptance, will outline quality assurance measures for the applicable work, will specify the acceptable procedure for installation of the specified work, will address plausible construction issues encountered during construction and will define acceptable tolerances for the accomplished work.

Task 5.3 – Solicitation and Competitive Bid Documents: The following solicitation and competitive bid document sections are envisioned as necessary to be included in the contract documents:

- Section 00100 – Instructions to Bidders
- Section 00101 – Requests for Bids
- Section 00305 – Bidder's Checklist
- Section 00310 – Bidder's Proposal
- Section 00313 – List of Subcontractors
- Section 00314 – Material Suppliers Information
- Section 00315 – Preliminary Construction Schedule
- Section 00316 – Non-Collusion Affidavit
- Section 00317 – Public Contract Code Section 10162 Questionnaire on Disqualification
- Section 00318 – Public Contract Code Section 10232 Statement on Contempt
- Section 00324 – Worker's Compensation Certification
- Section 00329 – Labor and Other Code Requirements Certificate
- Section 00340 – Qualification Statement
- Section 00501 – Contract Agreement
- Section 00502 – Indemnity Agreement
- Section 00503 – Guaranty
- Section 00600 – Bond Requirements
- Section 00601 – Bid Bond
- Section 00603 – Performance Bond
- Section 00604 – Payment Bond
- Section 00675 – Notice of Award
- Section 00680 – Notice to Proceed
- Section 00701 – Dispute Resolution, Suspension and Termination
- Section 00900 – Cultural Resources
- Section 00910 – Threatened and Endangered Species Compliance

Each solicitation and competitive bid document section will be developed for the work included in the project and will outline the process that contractors must follow to submit a successful qualified bid for the project and what will be required if they are successfully selected. The solicitation and competitive bid documents address California labor code compliance, indemnity requirements, bonding throughout bidding and the project, how Kaweah Delta WCD will resolve disputes throughout the project and commitments that the contractor will have to honor because of Kaweah Delta WCD findings regarding cultural resources and endangered species during CEQA proceedings.

Task 5.4 – Contract Documents: The following contract document sections are envisioned as necessary to be included in the contract documents:

- Section 01005 – Specifications
- Section 01011 – Description of the Work
- Section 01013 – Beginning of Work, Time of Completion, Liquidated

Damages
- Section 01017 – Materials
- Section 01018 – Contractor's Responsibilities
- Section 01019 – Construction Stakes, Lines, and Grades
- Section 01022 – Changes to the Work
- Section 01025 – Measurement and Payment
- Section 01026 – Waiver and Release Submittals
- Section 01040 – Coordination of Work
- Section 01052 – Engineer's Status during Construction
- Section 01090 – Definitions and Abbreviations
- Section 01200 – Project Meetings
- Section 01300 – Submittal Procedures
- Section 01400 – Quality Control
- Section 01500 – Temporary Facilities
- Section 01502 – Protection of Underground Facilities and Survey Monuments
- Section 01630 – Product Substitutions
- Section 01700 – Contract Closeout

Each contract document section will be developed for the specifics of this project and will outline the administrative arrangements between the District and the contractor. The contract documents address the priority of the parts included in the contract documents if there are conflicts, what will be the penalties if work is not completed as per the agreed to schedule, measurement and payment arrangements for work performed, submittal procedures, product substitutions and necessary steps to close out the contract.

Deliverables to DWR – Kaweah Delta WCD will deliver project construction drawings executed by a registered Civil Engineer in the State of California, project specifications executed by a registered Civil Engineer in the State of California; Competitive bid solicitation documents, and project contract documents based on the District's Standards to DWR (four printed copies and one electronic copy). These documents will be provided to DWR within 30 days of being finalized and accepted by Kaweah Delta WCD.

10.5.3.3 Task 6 – Environmental Documentation

Kaweah Delta WCD investigated the conditions at Oakes Basin prior to its construction several years ago and found through a previously adopted mitigated negative declaration that the construction and ongoing impacts of the project were minimal. It has been several years, however, since that investigation and determination was made. It is suspected that since Kaweah Delta WCD has maintained and operated the facility since its construction that there are no new environmental issues to be discovered at

the location, but out of an abundance of caution a biological assessment will be conducted in anticipation of processing a categorical exclusion for the construction of the new well and the planting of the habitat enhancement vegetation (Subtask 4.1). Given the results of this biological review are consistent with what is expected, the District will likely pursue a categorical exemption for the project. Accordingly, appropriate paperwork will be filled by District staff with the State Clearinghouse and the County Clerk. If something new is discovered through the biological review, a new evaluation of the project would be pursued and separate CEQA documentation would be produced by the District and its consultants. It would seem likely that, at worst, another mitigated negative declaration will be sufficient for the environmental documentation for this effort.

Deliverables to DWR – Kaweah Delta WCD will work with DWR to deliver draft CEQA documentation for DWR staff review and comment prior to the District's distribution of CEQA documents to other responsible agencies. Approved and adopted CEQA documentation (anticipated categorical exclusion) will be provided to DWR in printed and electronic versions within 30 days of being finalized and accepted by Kaweah Delta WCD.

10.5.3.4 Task 7 – Permitting

Task 7.1 – Stormwater Pollution Prevention Permit from the Regional Water Quality Control Board: As the project construction of the facility will likely disturb more than 1.0 acre of area it is it is anticipated that SWPPP Permit from the RWQCB will be required for the construction of the project. Kaweah Delta WCD will work with local consultants to generate the permit application based on project information from the final design and the Initial Study developed during environmental documentation. Then Kaweah Delta WCD staff and consultants will work with staff from the RWQCB to work out any potential issues in the permitting so that a successful permit can be issued for the construction by the RWQCB. Requirements from this permit will be incorporated into the construction documents for the project.

Task 7.2 – Well Driller's Permit: As per Section 4-13-1245 of the Tulare County Ordinance Code, a permit from the County of Tulare is required for the construction of a well. Application for this permit shall be made to the Health Officer. Such application shall be on forms furnished by the Health Officer and shall provide all information pertaining to the project required by the Health Officer. Every application shall be signed by the District. The Health Officer may prescribe conditions if he determines that they are required to prevent contamination or pollution of underground waters. Permit

conditions are appealable pursuant to section 4-13-1275 of this Article. A well permit shall be valid for six (6) months from the date of issuance.

Deliverables to DWR – Kaweah Delta WCD will deliver project permits from the Regional Water Quality Control Board and Tulare County to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Kaweah Delta WCD.

10.5.4 Budget Category (d): Construction/Implementation

10.5.4.1 Task 8 – Construction Contracting and Deliverables

There has been no construction contracting work accomplished for the project between September 30, 2008 and January 7, 2010. The current project design is what would be considered a partial (60%) design and requires a small amount of development before the project could be constructed.

Kaweah Delta WCD will develop a bid solicitation package for the construction of a small capacity irrigation well and the planting of the vegetation plan for the habitat enhancement for the Oakes Basin site and will pursue a submittal of bids from qualified contractors for the work. In this solicitation package, Kaweah Delta WCD will require proof of appropriate state licensing in order be selected for the work. The request for submittal of bids will be made public in local newspapers as is consistent with District procedures and State law. Submitting contractors will be required to provide unit costs for all listed items included in the work, an anticipated schedule for accomplishing the work, bid bonds, performance bonds and adequate insurance to cover the work required by the District. The qualified low bidder who has fully satisfied the bid solicitation shall be awarded the work from the District. The selected contractor will be required to submit monthly invoices to the District for payment on the work accomplished and approved of by the representatives of the District. The tasks listed below would be accomplished as part of the project after it was selected for grant funding.

Task 8.1 – Publish Notice to Bidders: A notice to bidders will be published in a local newspaper publication on the same day of the week in three successive weeks. This notice will provide the official title for the project and briefly describe the worked sought from bidding contractors. It will also present the location where bids shall be submitted as well as the date and time when bids will be publicly opened and read. The notice will describe the required conditions of the bid packet for acceptance and will describe the required mandatory pre-bid meeting's date, time and place. The notice shall describe

where bidding condiments can be acquired and how much they will cost. Further the notice shall describe to bidders that prevailing wages will be required for the job, that bidder's bonds in the amount of 10% of the base bid are required, and the required contractor's license classification for the project.

Task 8.2 – Pre-Bid Meeting and Addendum No. 1: As part of the public bid solicitation process, the District will conduct a mandatory pre-bid meeting with interested contractors to go over information in the construction documents and answer questions submitted by contractors. An attendance list will be generated for the meeting and detailed minutes will be taken of all discussions during the meeting. The attendance list from this meeting, the questions asked at this meeting and the responses to these questions will be summarized in one document that will become Addendum Number One to the Contract Documents and will be distributed to all plan holders and contractors that were present at the pre-bid meeting.

Task 8.3 – Bid Opening and Bid Evaluation: An attendance sheet will be kept for the bid opening. The project engineer, his representative or the District engineer will keep the official clock as to when the time for acceptable bid submittals has passed. After that time has been declared, all submitted bids will be collected, will be opened and the submitting contractor and total bid amount and will be read aloud to those present. Then this meeting will be closed and the project engineer, his representative or the District engineer will begin evaluating the submitted bids. The contractor's license, the bond amounts, the bond rating of the issuing company, the insurance and the contractor's history of claims, the math involved in the bid proposal, the preliminary project schedule, the subconsultants listed, similar project experience, listed references, as well as the certifications and required forms will all be checked against what was required in the contract documents. A summary of this evaluation of bids will be generated for the District staff and the Board of Directors to consider.

Task 8.4 – Bid Award: After the selection of the successful bidder for the project by the District's Board of Directors, project engineer, his representative or the District engineer will prepare the Notice of Award for submittal to and signature from the selected contractor. The project engineer, his representative or the District engineer will work to issue and have signed all remaining documents within the contract and review, receive and verify all project bonding, and comment and eventually approve all product submittals and submitted plans. Prior to the contractor moving any equipment to the site, it will be re-visited by the biological consultant to verify that conditions have not changed since it was originally evaluated. Also a flier will be produced for the contractor regarding any cultural resource or sensitive species issues that need to be kept in mind

during construction and regularly checked. After this is accomplished the project engineer, his representative or the District engineer will issue the Notice to Proceed. This notice will officially begin the contractor's allowable timeframe for the construction of the facility.

Deliverables to DWR – Kaweah Delta WCD will deliver the project's advertisement for bids from a local publication, the agenda and minutes from the pre-bid contractors meeting, information regarding the evaluation of bids submitted to the District, and information and documentation on the award of all construction contracts to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Kaweah Delta WCD.

10.5.4.2 Task 9 – Construction

The construction efforts of the project will be the construction and development of one small irrigation well at the Oakes Basin, the installation of an associated drip irrigation system and the vegetation of the basin as per previous District planning documents. The tasks listed below would be accomplished as part of the project after it was selected for grant funding.

10.5.4.2.1 Subtask 9.1 – Mobilization and Site Preparation

Subtask 9.1.1 – Mobilization: This work task will include the mobilization for all demolition, construction, and site work authorized under the construction contract and all necessary equipment and materials to the project site. Once mobilization has begun, the contractor will assume responsibility for project site security. This work item also includes obtaining the required insurance, and securing all necessary licenses, permits, preparations of plans, and paying any potential permit fees for the entire project. This work task will also include contacting Underground Services Alert for a review and marking of the project site for existing utilities.

Subtask 9.1.2 – Worker Protection: This work item includes provisions for protection of workers from any hazards that may occur during execution of the work at all times, including but not limited to weekends, holidays, and non-working hours. This work item will include providing, as necessary, all shoring, sheeting and bracing for trench and excavation stabilization and safety.

Subtask 9.1.3 – Miscellaneous Facilities and Operations: This work item includes provisions for de-watering, maintaining drainage, traffic control, construction and removal of temporary security fencing, construction of staging areas, protection of

existing facilities, general project clean up, and all costs for miscellaneous work shown and described in the Contract documents that is not included in other work items. Also this work item includes provision of all necessary facilities for the contractors employees to work on-site in compliance with State labor Code, such as portable bathroom facilities.

10.5.4.2.2 Subtask 9.2 – Project Construction

Task 9.2.1 – Construction Staking: Construction stakes would be provided by the District's consultant to the contractor upon request near the top of the existing bank, referencing a fixed design feature (i.e. centerline, inside toe of slope, inside hinge point, but not slope stakes), at 100-foot intervals. Construction staking will also reference critical underground pipes and box culverts, and headwall and inlet/outlet structure locations. Also, cutsheets will be provided to contractors and/or the District upon completion of each staking request, displaying stake locations and details.

Task 9.2.2 – Miscellaneous Engineering Services: Questions regarding specifications, design or consulting are common during construction activities. It is envisioned that District staff will need to have the project engineer or his representative available to answer any questions as they arise. The project engineer understands that time is a critical element in order to complete all construction activities for the Project and that communication may be made available during all construction activities.

Task 9.2.3 – Irrigation Well Construction: This work task will construct one small irrigation well at Oakes Basin. The irrigation well will be drilled by qualified well drillers with experience in construction of irrigation wells. It is anticipated that the following requirements will be included,

- Experience – The Contractor shall have at least 5 years experience in drilling wells to depths of at least 400 feet using the drilling, construction and development methods as specified; and
- License – The well driller must possess a current C-57 Well Drillers License, valid in the State of California.

The drilling will be performed in Tulare County and the Contractor shall obtain well drilling permits (as noted in Task 7.1) from Tulare County, and shall report the results of the drilling to the California Department of Water Resources. A well completion report will be filed with the California Department of Water Resources.

All drilling, casing, sealing, developing, test pumping, and other work incidental to the well shall be performed by the Contractor. The Contractor shall drill the hole by the

reverse rotary method and shall provide all necessary equipment for development and test pumping of the wells.

During drilling, the borehole cuttings will be logged and classified in accordance with the Unified Soil Classification System. Well log information will include date of drilling, type of drill rig, type and diameter of drill bit, type of fluid additives, and depth of boring. Upon completion of drilling, the boring will be geophysically logged (E-logged) to aid in identifying aquifer and aquitard materials and the depth of occurrence of each. The project engineer shall be allowed up to seven (7) calendar days to review the pilot hole data and to determine final well design. Construction of a production well shall not proceed until Engineer has made final recommendation of construction details. Blank casing zones and appropriate well screen intervals would be identified.

The irrigation wells shall be drilled as a 12-inch hole and fitted with a 10-inch diameter, PVC casing, with slots made to allow water to enter the casing as per the project specifications. A sanitary seal shall be installed on the irrigation well, and the above ground well head and discharge piping shall be constructed. The discharge piping shall include a check valve to avoid water flowing backward down the well column, a butterfly valve to allow the operator to throttle the well if necessary and a flow meter that is accurate within the flow range produced by the well.

Task 9.2.4 – Irrigation Well Preliminary Development: Swabbing and airlifting shall be used for preliminary well development. The swabbing and airlifting operations shall commence at the bottom of the lowest perforated casing section and work upward in short screen intervals of no more than 20 feet. The swab shall be repeatedly hoisted at each increment. Upon reaching the top of the uppermost perforated section, the swabbing shall proceed back downward, in similar manner, to the bottom of the well.

During preliminary development the Contractor shall monitor the level of gravel in the annulus and add material as necessary. After preliminary development is complete the gravel level shall be at the depth specified in the Plans or as modified by the Engineer.

The well shall then be developed by pumping and surging with a test pump. Contractor shall provide temporary pump equipment for test pumping. The pumping equipment shall be clean and in good operating condition upon delivery to the site. Within not more than four (4) days after completion of preliminary development, the Contractor shall commence well development by pumping and surging.

Task 9.2.4 – Irrigation Well Development by Pumping: The Contractor shall install, operate, and remove a pump for developing the well. The pump shall have a capacity in excess of 3,000 gpm against a total head of 600 feet measured at the discharge

head. Pump bowls shall be set to a depth of at least 300 feet. The prime mover shall be a variable speed type. The Contractor shall install discharge piping from the pumping unit of sufficient size and length to conduct water to the point of disposal together with a totalizing flow meter which will accurately measure the flow rate. The point of discharge will be at least 500 feet from well. Gauges, valves, meter, access tubes, and other equipment required shall be installed prior to start of pump development. The Contractor shall cooperate with the Engineer who will be present periodically during the well development.

The initial pumping rate shall be restricted (500 gpm) and as the water clears shall be gradually increased in 200-gpm steps until the maximum rate is reached. Development shall continue at each step rate for a minimum of one hour. At intervals of approximately 10 to 15 minutes, the pump shall be stopped and the water in the pump column shall be allowed to surge back through the pump bowls and through the perforated area.

Development records shall be maintained on at least a 1/2-hour interval showing pumping rate, pumping level, and sand production. Development shall continue until the following conditions are met:

1. The specific capacity (gpm per foot of drawdown) no longer increases with time.
2. Sand production is less than 5 ppm within 10 minutes after commencement of pumping at this capacity of the well. Failure to meet this requirement may be sufficient cause for rejection of the well

The Contractor shall be responsible for disposing of all development and test water. Water, including mud, sand and debris pumped from the well during developing and testing shall be disposed of by the Contractor on site in such a manner as not to damage or interfere with other work. The disposal and discharge sites shall be approved by Kaweah Delta WCD and will not be allowed in the Oakes Basin as it is a recharge basin.

Development pumping and surging (not including pump test) is expected to be completed within 48 hours of total pumping time. Upon completion of a production well, development and pump test, the Contractor shall furnish three (3) copies of the pump test to the Engineer.

Task 9.2.5 – Making Well Operational:

Provision shall be made to:

- Extend electrical service to well site;

- Convey information to the District's consultant for selection of appropriate motor and pump;
- Contractor to furnish and install pump electrical panel;
- Contractor constructs sounding tube, gravel tube and concrete pump base;
- District works with utility to set-up new account and service
- Utility and County inspection of underground conduits;
- Contractor furnishes and installs new pump, motor and electrical connections to pump panel;
- Final well inspection by Utility and County;
- Construct discharge piping, flow meter, check valve and pressure tank with concrete pad.

Task 9.2.5 – Irrigation System Construction: The irrigation system for the vegetated area of the Oakes Basin Habitat Enhancement Project will come off of the well head discharge and manifold piping into PVC header pipes that will be the conduits that deliver water to the flexible hose runs. The irrigation well is envisioned to be located on the west edge of the basin. PVC header piping is anticipated to be buried 36-inches deep below the top of the earthen levee so that there can be header deliveries on the west and east sides of Cells 1 and 2. This header piping will likely be installed after a trencher has cut a new trench in the existing basin levee. After piping installation, material from the trench will be compacted around the pipe with hand whackers to a relative compaction of 90%. After sufficient material is built up over the new pipeline, mechanical compactors will be allowed. The PVC header pipe is anticipated to be 6-inches in diameter because of the long distance from the west to east side of the project (high friction losses). PVC header pipes would be daylighted through a PVC to steel transition and a reducing coupling that would allow for the attachment of above ground flexible irrigation tubing. This tubing would be the conduit that would be run between newly planted trees and bushes so that bubblers or emitters could be attached to the tubing to allow water to be delivered to the new plants. Irrigation emitters or bubblers would be pressure compensating so as to ensure that a dependable flow amount was delivered to each plant as intended. Irrigation system valves will be installed at strategic locations to allow for easy management of different portions of the irrigation system as well as flushing and maintenance of the system.

Task 9.2.6 –Vegetation Plan Planting: Native oak trees will be planted and maintained for a three-year period to help ensure the rapid establishment of valley oak dominated riparian habitat in the restoration area. Plant species selection was based on the woody species composition along Packwood and Mill Creeks, the woody species composition

in existing remnant stands of riparian habitat within the Kaweah River Preserve (Griggs 1983) and on the restoration area hydrology. Trees will be planted on an average of 15-foot centers throughout the restoration area.

Common Name	Scientific Name	On-Center Spacing (feet)	Percent of Total Number of Trees Installed	Approx. Number to be Installed /Acre	Container Size
Trees:					
Valley Oak	*Quercu lobata*	16	70%	153	treepot-4

Notes:
A relatively small proportion of valley oak (5% Max) can be transplanted from larger container stock for aesthetic purposes.
treepot-4 = 4" sq. x 14" long. deepot = 2.5" diameter x 10" long.

The container plants to be installed within the mitigation site will be contract grown at a nursery with experience in the propagation of California native riparian species.

Trees will be planted between October 15 and February 15 when the plant material is relatively dormant and the soil moisture is relatively high. Plant installation outside of this window would require increased irrigation and would likely incur higher rates of mortality.

The planting holes will be two feet in a diameter and equal in depth to that of the containers. The sides and bottom of each hole will be sacrificed and each planting hole will be irrigated before planting and irrigated again immediately following planting. The plants will be installed so that their root crowns are at, or are slightly above (up to 0.5 inches), the soil surface following soil settlement after irrigation.

Photodegradable tree shelters (shelter height = 4 feet) will be installed for the valley oak plantings. The tree shelter will both increase soil moisture in the vicinity of the oak plantings and reduce potential animal damage. Tree shelters have been shown to increase the percent survival and height increment for oak plantings when implemented in concert with week control (McCreary and Tecklin 1992). No plant protection is purposed for the other species to be planted. The other species planted will be observed during the first few years following plant installation to determine if animal

damage is a significant problem for trees planted without protection, measures will be taken to alleviate the problem.

Common Name	Scientific Name	Type	Min. Perc. Germination	Application rate of Pure Live Seed (lbs/acre)
Blue wildrye	*Elymus glaucus*	perennial grass	80%	25
Meadow barley	*Hordeum brachyantherum*	biennial grass	80%	30
Zorro fescue	*Vulpia myorus*	annual grass	80%	10
Arroyo lupine	*Lupinus succulentus*	annual leguminous forb	75%	10
California poppy	*Eschscholzia californica*	annual forb	75	2

Task 9.2.8 – As-Built Drawings: Changes to the original design would be catalogued through construction and documented through an as-built set of plans for the District's records.

10.5.5 Budget Category (e): Environmental Compliance/Mitigation/Enhancement

10.5.5.1 Task 10 – Environmental Compliance/Mitigation/Enhancement

Based on preliminary results shared by the CEQA compliance consultant for the project, the project will likely not impact Federal of State protected species or natural communities. However, this task has been developed to mitigate any potential disturbance or impacts to protected species or communities. As previously discussed, the construction of the project's regulation basin will involve excavation of the floor of the basin and construction of earthen levees. Preventative measures will be used during construction to minimize potential impacts to wildlife, including:

- Vehicles should use slow speeds (<15 miles per hour), especially at night, when driving through or around the Project site to minimize potential for striking or

disturbing animals. San Joaquin kit fox and other animals are vulnerable to collisions with autos.

- Open pipes and culverts should be inspected before being moved or altered to prevent wildlife from being injured or trapped.
- A pre-construction survey was performed to determine if there was a presence of the San Joaquin Kit Fox or the Swainson Hawk.
- If special status species are encountered during an inspection, they should be left alone to passively exit the area unless otherwise authorized by CDFG or USFWS.
- Any migratory birds and their nests should be not be disturbed as outlined in the Migratory Bird Treaty Act of 1918(MBTA). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in Section 50 of the Code of Federal Regulations(CFR) Part 10, including feathers or other parts, nests, eggs or products, except as allowed by implementing regulations (50 CFR 21).
- If building or tree removal must take place during the bird nesting season (February-August) due to construction schedule constraints, pre-disturbance surveys for bird nesting activity should be conducted by a qualified biologist no more than 15 days before tree and building removal. If active nests are located within the construction site, nests should be buffered an appropriate distance as specified by a qualified biologist. Within that buffer no disturbance should occur until after nesting season for the observed species is concluded. Pre-disturbance surveys for bird nesting activity should include the trees on-site, burrows and open buildings (house/garage and shed).

Another mitigation measure requires the District to monitor for cultural resources throughout the construction process. If during the course of the project construction, any archaeological or historical resources are uncovered, discovered or otherwise detected or observed, activities within 50 feet of the find shall be ceased.

This work item includes the cost for implementation of the Dust Control Plan (DCP), and all revisions the Contractor, District, and/or regulating authority deem necessary to comply with all federal, state, and local air pollution laws and regulations; finalizing, submitting, and implementation of the Stormwater Pollution Prevention Plan (SWPPP), and all revisions the Contractor, District, and/or regulating authority deem necessary to comply with all federal, state, and local water pollution laws and regulations. Also included in this bid item is the construction and maintenance of all of the facilities

required to comply with the DCP and SWPPP; removal of the required facilities upon project completion; and shall include full compensation for providing all miscellaneous materials, incidentals, labor, tools and equipment and for doing all work involved as detailed in the Plans and Specifications, and complying with the DCP, SWPPP, and their respective subsequent revisions.

10.5.6 Budget Category (f): Construction Administration

10.5.6.1 Task 11 – Construction Administration

Prior to construction, District staff will work with the contractor to verify that the material and equipment used in the construction of the irrigation well and development of habitat enhancement area is consistent with applicable ordinance codes and that material suppliers are identified and approved. District staff will work with the selected contractor to verify that the well construction work was accomplished by the contractor as per the contract, that the contractor bills the District appropriately for the work and that warranty over the work is established by date and honored until the agreed upon expiration date has passed. This work will be coordinated with the representative of the District. If unforeseen circumstances are encountered by the contractor, District staff will expeditiously work to make a determination whether the circumstance is a material change to the work described in the contract. If this is determined, the contractor shall be compensated for this change as per District policy.

10.6 Groundwater Quality Protection and Investigation Project Tasks

Tulare County's Department of Environmental Health Services is partnering with Self Help Enterprises and Community Water Center to undertake the Groundwater Quality Protection and Investigation Project. These three entities have worked with each other on similar efforts in the past and have an established working relationship. Tulare County has enjoyed previous collaborations with Self Help Enterprises and Community Water Center because of their unique qualifications, experience and expertise. For this effort, Memorandums of Understanding to define rolls and obligations in the effort will be in place between all three parties prior to commencement of work.

10.6.1 Budget Category (a): Direct Project Administration Costs

10.6.1.1 Task 1 - Administration

Tulare County will administer the Groundwater Quality Protection and Investigation Basin Project and work to manage and account for all aspects of the project. Tulare

County staff and consultants will undertake contracting for construction services and construction review for the project; will establish schedules and evaluate the quality of the project work accomplished. This effort will regularly evaluated at monthly project meetings between the Project Manager, Tulare County staff working on the project, consultants working for Tulare County, and selected contractors. At these meetings progress over the previous month will be reviewed, issues in implementing the project will be discussed, and action items will be established for the next month.

Deliverables to DWR – Tulare County will deliver monthly invoices of work accomplished to Kaweah Delta WCD, who will forward them to DWR. Within these reports pay requests from contractors, certified weekly payroll records, and verifications of prevailing wage compliance will be included.

10.6.1.2 Task 2 - Labor Compliance Program

Tulare County currently does have an adopted and enforced labor compliance program. As part of the work in this task Tulare County will ensure the full enforcement of their existing labor compliance program pursuant to California Labor Code §1771.5(b), which County Counsel believes is compliant with State Law. Therefore, the Tulare County will be in compliance with California Labor Code §1771.8, that a labor compliance program will be in place at the time of contract award, for this submitted project.

As part of all work accomplished by Tulare County, either through consultant, contractor or by County staff, the County's standard practice is to verify prevailing wage rates for applicable personnel. In contracted situations, the County requires that contractors and subconsultants to contractors submit weekly certified payroll. For consultants, the County requires that monthly invoices be submitted for work accomplished and that those invoices show employee category, the hours worked within the time period and a separate total for reimbursable expenses. This information is then reviewed and compared to Tulare County prevailing wage rates to verify that the appropriate wages and benefits have been paid to employees working on County projects. For Tulare County employees, this is very rarely an issue because the County compensates their staff at higher than prevailing wage rates. However, whenever there is a construction project undertaken by the County, these rates are verified by the County's accounting staff to ensure that appropriate compensation is provided to employees and that the County fully complies with all portions of the California Labor Code.

Another part of the County's standard practice is to verify that all contractors employed by the County for construction projects are appropriately licensed by the State of California and are in good standing. According to Tulare County ordinance code, only a

person licensed pursuant to the Business and Professions Code of the State of California to engage in well drilling who possess an active C-57 contractor's license would be contracted for the destruction of an abandoned well.

Further, before commencing work, the contractor shall obtain at his own expense, and agrees to keep in effect during the life of this Contract, as a minimum requirement, the following insurance in a company or companies acceptable to the Owner. All insurance, excepting Workers' Compensation and Occupational Disease Insurance, shall include as additional insured: the Owner, the County, the State, the Federal Government, all County consultants, and their officers, employees, consultants and agents.

1. Worker's Compensation and Occupational Disease Insurance meeting the statutory requirements of the State in which the work is to be performed; and Employer's Liability Insurance in an amount of at least $1,000,000.
2. Comprehensive Liability Insurance with limits of:
   Bodily Injury, Property Damage and Personal Injury - $1,000,000 each occurrence, $5,000,000 aggregate.

   This insurance shall be on an occurrence basis and shall protect the Contractor against liability arising from: his operations, operations by sub-contractors, elevators, products, completed operations and contractual liability assumed under the indemnity provisions above insurance.
3. Automobile Liability on occurrence basis covering all owned, non-owned, and hired automobiles for limits of liability of:

   Bodily Injury and Property Damage - $1,000,000 each occurrence.
4. Builder's Risk Insurance is required.

These limits shall be considered sufficient for the contractor associated with this project, provided however, that the limits of such insurance shall not limit the extent of such assumed responsibility and liability.

Deliverables to DWR – Tulare County will submit their Labor Compliance Program to DWR. This program will be adhered to through the project in all dealings with the retained consultants and contractors and their personnel as well as County employees accomplishing portions of the project work. Also, all contracts signed by Tulare County for contracted services will be supplied to DWR for verification that they are consistent with the California Labor Code.

10.6.1.3 Task 3 – Reporting

Tulare County staff will undertake the reporting effort the Groundwater Quality Protection and Investigation Basin Project and will work to provide required materials to Kaweah Delta WCD, who will forward them to DWR consistent with what is outlined in this grant application and with the contract that Kaweah Delta WCD will sign as proposing agency for this IRWM grant with the State of California. Reporting, accounting, and administration will regularly be evaluated at monthly project meetings between the Project Manager, Tulare County staff working on the project, consultants working for Tulare County, and selected contractors. At these meetings progress, progress reports will be generated by the group that include site pictures of recent progress being made, and applicable construction logs will be included if available.

Tulare County will also generate reporting of project progress to the IRWM group and to the County's Board of Supervisors on a monthly basis.

Deliverables to DWR – Tulare County will deliver quarterly progress reports as well as annual reports to Kaweah Delta WCD, who will forward them to DWR for this project. Within these reports site pictures of progress will be included, applicable construction inspection logs, and project team meeting agendas and minutes.

10.6.2 Budget Category (b): Land Purchase/Easements

There are no purchases of land or easements currently envisioned in this project.

10.6.3 Budget Category (c): Planning/Design/Engineering/Environmental Documentation

10.6.3.1 Task 4 – Assessment and Evaluation

A small portion of project planning has been accomplished to date. Efforts to secure project funding have been the project's focus for the last few years and so some general planning and project development has been accomplished. As this is a project and a study, the current project design is the implementation of a County standard for well destructions, so it can be considered a final design. The study effort has been outlined and is sufficiently developed concept to provide detailed information regarding each of the significant portions of the effort.

Task 4.1 – Identify Priority Areas: Utilize GIS data to identify high priority areas in the Kaweah River Basin IRWM area. Select three highest-priority areas based on threat to critical water supplies of disadvantaged communities. Select three priority areas where

disadvantaged communities rely on private wells and there is known or suspected contamination. Select subcontractors for outreach and development and dissemination of educational materials. The expected duration of this task is approximately three months.

Task 4.2 – Selection of Private Wells for Destruction: Tulare County will select up to 100 private domestic disused wells in areas identified as threatening critical water supplies of disadvantaged communities for financial assistance toward proper well abandonment. Targeted participants will be low-income families who would not be able to afford the cost of well destruction on their own, and therefore would probably never do it. Amnesty will also be offered for any Tulare County penalty fees as part of the participation in the program. The selection of wells will be on a first come first serve basis, for applicants that qualify for financial assistance. The County's assistance program would provide up to 50% of the costs of the well abandonment, up to $3,500, for applicants with qualifying abandoned wells. Applicants with a household income of less than 80% of the Statewide Median Household Income would qualify for County payment of 100% of the wee destruction costs up to $3,500 per well. To participate, the applicant (who will be required to be a homeowner) will be required to sign an agreement with Tulare County and provide their share of the costs to destroy the abandoned well. The County's agreements will set forth the obligations of all parties and be signed by a representative from Tulare County Environmental Health Services, the Drilling contractor and the property owner. These agreements would include right of entry, liability indemnification, use of licensed contractor, amount owed by each party, work to be conducted, etc.

As part of this effort the Self Help Enterprises will obtain a new well sounder with a portion of the grant funds and will be using the sounder at well destruction locations and the water quality testing locations to measure the depth to groundwater prior to well destruction. This data will be collected and summarized before it is provided to the Department of Water Resources. Also this information will be integrated into the Tulare County groundwater database and shared with the Kaweah River Basin IRWM group

Task 4.3 – Outreach and Technical Assistance for Private Well Owners: Community Water Center will conduct outreach on behalf of Tulare County regarding water quality issues within disadvantaged communities within the Kaweah River Basin IRWM area. Self Help Enterprises will provide technical assistance to private well owners contacted and needing services. These two groups will interact with communities without reliable sources of safe drinking water as part of this project, including communities with private wells with known or suspected contamination. The described outreach may include

community meetings, printed materials, door-knocking and surveying. Visual materials, such as brochures will be produced to give homeowners accurate and concise information about groundwater contamination and how it may affect their families.

A brochure will be produced that will identify some common contaminants and their related health affects while also encouraging homeowners to consider the County well testing program and take advantage of the opportunity if they are interested. A short release form will be included in the brochure that explains that water quality information will be shared with the Department of Water Resources, but that the names and addresses of participating families will be withheld. Further, this water quality information will be integrated into the County's groundwater database, will be shared with the Kaweah River Basin IRWM group and will be linked to a well log if available. The expected duration of this task is approximately eight months.

Task 4.4 – Well Sampling: With outreach assistance from Community Water Center, Self Help Enterprises will work directly with homeowners to take samples from private wells and deliver or have the samples delivered to a state certified lab for testing. Self Help Enterprises and Community Water Center will work on behalf of the County and will help select up to fifty private wells for sampling in communities with suspected contamination. Each well is envisioned to be tested for dibromochloropropane (DBCP), bacteriological, nitrate, arsenic, gross alpha and perchlorate. However, the location of the well and knowledge of other regionally significant contaminants will play a role in what is tested in each well. The water quality testing would be set-up so that the County pays for the described analysis at the pre-approved laboratory having a contract with Tulare County through the County Administrative Office. Self Help Enterprises and Community Water Center would then provide well owners with water quality lab results interpretive materials and individual counseling that address actual contaminants found and possible strategies for avoiding negative health effects. The expected duration of this task is approximately seven months.

Task 4.5 – Feasibility Studies: The feasibility study effort will focus on communities that are not served by a community water system, but rather are served by many private groundwater wells. In communities like this, there is rarely an opportunity for funding to develop a community water system. Without a local entity such as a water company or special district to apply for funding or manage projects, the existing funding models available through the Department of Water Resources, California Department of Public Health, and the United States Department of Agriculture are not able to provide the necessary assistance.

Self Help Enterprises will put out a Request for Qualifications for engineering consultant services to pursue these studies. It is anticipated that one Request for Qualification will be used to request a proposal to do all the studies, meaning that the same firm would undertake all three efforts. The feasibility studies will explore and discuss potential barriers and possible solutions to community drinking water problems in the selected communities. The issues likely to be considered in the feasibility studies are proximity to an existing larger community water system, existing county boundaries (which involve differing ordinances and groundwater regulations), the need for easements, the cost of operating a standalone community water system, household income and ability to absorb debt, community support for a project, water supply reliability and fire flows, and the likelihood of finding good quality groundwater if a community drinking water well is drilled. Also, potential funding assistance sources would be identified, as well as appropriate partnering entities that could make the application on behalf of the community (likely either the County or, in the case of water system consolidation projects, it could be the larger community.) The feasibility studies will make recommendations on a community-by-community basis about the feasibility of carrying out a construction project to improve water quality and supply in each place.

As a part of the outreach conducted for sampling and well destruction, Self Help Enterprises and Community Water Center will facilitate community discussions around potential solutions to water quality issues identified through the well sampling. A selection of up to three communities will then be made for feasibility level evaluations. The feasibility study efforts will be focused on specific disadvantaged communities that have unresolved issues and that need assistance in determining potential feasible solutions. Each feasibility study will analyze the selected water supply or water quality issues, will evaluate possible solutions in terms of effectiveness and costs (both construction and O&M) per alternative, will evaluate consolidation with any other nearby community water systems, will evaluate water supply availability and fire flow requirements, will discuss local groundwater quality issues, will evaluate the community served and their potential financial ability contribute toward the effort, and will evaluate the potential grant funding programs available for these kinds of efforts.

Tulare County, with assistance from Self-Help Enterprises, will publish a Request for Qualifications (RFQ) to prepare up to three water supply and water quality feasibility studies. The feasibility study effort is definitely scalable depending on the available funding. All three studies would be included in the one RFQ, and engineering firms would be invited to submit proposals for all three simultaneously, but as separate projects. The County, again with help from Self-Help Enterprises, would evaluate the proposals and select engineering consultants based on qualifications, experience,

knowledge of the area, and ability to perform work in a timely manner. If appropriate, all three studies would be awarded to the same firm, unless mitigating circumstances indicate that the work should be divided. The County's Administrative Office will officially contract for engineering services to accomplish the feasibility studies.

Self-Help Enterprises will work with Tulare County to manage the feasibility study effort and will work with disadvantaged communities in the Kaweah River Basin IRWM area to identify the criteria for each of the three studies. Self-Help Enterprises and Community Water Center will collect the initial available information on the study issues and will be a project link between the engineering consultant and the disadvantaged community. Technical assistance providers will facilitate community decision-making regarding preferred solutions. The expected duration of this task is approximately eleven months.

In cases where the feasibility study is completed and further exploration and planning seems warranted, the planning effort will move to the Preliminary Engineers Report stage. Assuming that work performance has been satisfactory; Tulare County and Self Help Enterprises would amend existing agreements with the engineering consultant to move forward with Preliminary Engineers Report.

Task 4.6 – Technical Assistance to Communities: This task includes the selection of consulting engineers, preparation of contracts and interfacing between communities and consultants in the inception of the Preliminary Engineering Report process. Engaging in this process will require some technical assistance at the community level. It is expected that some education will be necessary to share available information from the feasibility studies and help make it relevant to residence of communities. Also consideration of the projects designed during the preliminary engineering reports may require some technical assistance regarding processes or equipment that is not familiar to local residents. The expected duration of this task is approximately thirteen months.

Task 4.7 – Preliminary Engineers Reports: When and if the potential solutions identified at the feasibility study stage include fundable construction and/or consolidation projects, feasibility studies will be expanded to the Preliminary Engineering stage, wherein alternatives are closely evaluated and preliminary planning is carried out. Preliminary Engineering Reports (PERs) are critical elements of State and federal funding applications. The expected duration of this task is approximately thirteen months. Preliminary Engineering Reports will develop the preferred feasible alternative from the feasibility studies and advance the project concept to a state where the basis of design is developed, critical issues for the development of the projects are identified, 30% design plans have been generated, and cost estimates based on the conceptual design

have also been generated in an effort to make the project ready for potential grant funding opportunities.

As with the feasibility study efforts, Self Help Enterprises will work with Tulare County to organize the Preliminary Engineering Report effort and will work with disadvantaged communities in the Kaweah River Basin IRWM area to commit to a preferred alternative from the feasibility studies that will be developed in each of the three Preliminary Engineering Reports. Self Help Enterprises and Community Water Center will be a project link between the engineering consultant and the disadvantaged community. Self Help Enterprises will work with Tulare County to select qualified civil engineering consultant(s) to prepare up to three Preliminary Engineering Reports that address the most critical water quality and water supply issues in local disadvantaged communities in the Kaweah River Basin IRWM area.

Deliverables to DWR – Tulare County will deliver copies of the depth to water elevation information from sounded wells, the groundwater quality information from tested wells, the outreach materials used with the public, the three feasibility studies produced through this effort, and the three Preliminary Engineering Reports produced through this effort to DWR as materials, data sets and technical studies produced through this effort. Four printed copies of each report will be provided to DWR as well as one digital copy containing all printed material in the report. These reports will be provided to DWR within 30 days of being finalized and accepted by Kaweah Delta WCD.

10.6.3.2 Task 5 – Final Design

The well destructions that will be accomplished under this project will be as per the appropriate Tulare County ordinance code and therefore will not require designs for the individual sites. The preliminary feasibility studies and engineering reports will not be advanced to final designs through this project.

Deliverables to DWR – There will be no deliverables for this task in this project.

10.6.3.3 Task 6 – Environmental Documentation

This project will not require CEQA documentation as all study and construction activities fall into statutory exemptions or ministerial actions.

Environmental Compliance documentation for any proposed solution for a community will be pursued through the selected Civil Engineering consultants if sufficient funds remain after preliminary engineering has been accomplished in Tasks 4.5 and 4.6. If

this effort is not feasible within the available budget, it will be included future grant applications.

Deliverables to DWR – Tulare County will work with DWR to deliver the documentation for statutory exemption or ministerial actions that the County plans to rely on for CEQA compliance for project construction activities (demolition of wells). Approved and adopted CEQA documentation, including the signed statutory exemptions or ministerial actions, the resolution accepting the finalized documentation and instructing County staff to file the Notice of Determination with the county clerk and the state clearinghouse. These documents will be provided to DWR in printed and electronic versions within 30 days of being finalized and accepted by Tulare County.

10.6.3.4 Task 7 – Permitting

In order to accomplish the destruction of the wells described in Task 9, a permit must be secured by the County with the owner of the well granting permission for County staff and the well destruction contractor and his crew to enter his or her property. Part of this permit will describe the condition to which the project site will be restored after construction is complete.

As per Section 4-13-1245 of the Tulare County Ordinance Code, a permit from the County of Tulare is required for the destruction of a well. Application for this permit shall be made to the Health Officer. Such application shall be on forms furnished by the Health Officer and shall provide all information pertaining to the project required by the Health Officer. Every application shall be signed by the owner or his authorized designee. The Health Officer may prescribe conditions if he determines that they are required to prevent contamination or pollution of underground waters. Permit conditions are appealable pursuant to section 4-13-1275 of this Article. A well permit shall be valid for six (6) months from the date of issuance.

Deliverables to DWR – Tulare County will deliver project permits from the County of Tulare for well destructions and from private owners to the County and contracted well drillers for access to accomplish the well destructions to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Tulare County.

10.6.4 Budget Category (d): Construction/Implementation

10.6.4.1 Task 8 – Construction Contracting and Deliverables

There has been no construction contracting work accomplished for the project to date. This is a new project that has currently only been planned. The tasks listed below would be accomplished as part of the project after it was selected for grant funding.

Task 8.1 – Publish Notice to Bidders: A notice to bidders will be published in a local newspaper publication on the same day of the week in three successive weeks. This notice will provide the official title for the project and briefly describe the worked sought from bidding contractors. It will also present the location where bids shall be submitted as well as the date and time when bids will be publicly opened and read. The notice will describe the required conditions of the bid packet for acceptance and will describe the required mandatory pre-bid meeting's date, time and place. The notice shall describe where bidding documents can be acquired and how much they will cost. Further the notice shall describe to bidders that prevailing wages will be required for the job, that bidder's bonds in the amount of 10% of the base bid are required, and the required contractor's license classification for the project.

Task 8.2 – Pre-Bid Meeting and Addendum No. 1: As part of the public bid solicitation process, the County will conduct a mandatory pre-bid meeting with interested contractors to go over information in the construction documents and answer questions submitted by contracts. An attendance list will be generated for the meeting and detailed minutes will be taken of all discussions during the meeting. The attendance list from this meeting, the questions asked at this meeting and the responses to these questions will be summarized in one document that will become Addendum Number One to the Contract Documents and will be distributed to all plan holders and contractors that were present at the pre-bid meeting.

Task 8.3 – Bid Opening and Bid Evaluation: An attendance sheet will be kept for the bid opening. The project manager, or his representative, will keep the official clock as to when the time for acceptable bid submittals has passed. After that time has been declared, all submitted bids will be collected, will be opened and the submitting contractor and total bid amount and will be read aloud to those present. Then this meeting will be closed and the project manager, or his representative, will begin evaluating the submitted bids. The contractor's license, the bond amounts, the bond rating of the issuing company, the insurance and the contractor's history of claims, the math involved in the bid proposal, the preliminary project schedule, the subconsultants listed, similar project experience, listed references, as well as the certifications and

required forms will all be checked against what was required in the contract documents. A summary of this evaluation of bids will be generated for the County staff and the Board of Supervisors to consider.

Task 8.4 – Bid Award: After the selection of the successful bidder for the project by the County's Board of Supervisors, the project manager or his representative will prepare the Notice of Award for submittal to and signature from the selected contractor. The project manager or his representative will work to issue and have signed all remaining documents within the contract and review, receive and verify all project bonding, and comment and eventually approve all product submittals and submitted plans. Also a flier will be produced for the contractor regarding any cultural resource or sensitive species issues that need to be kept in mind during construction and regularly checked. After this is accomplished the project manager or his representative will issue the Notice to Proceed. This notice will officially begin the contractor's allowable timeframe for the construction of the project.

Deliverables to DWR – Tulare County will deliver the project's advertisement for bids from a local publication, the agenda and minutes from the pre-bid contractors meeting, copies of the submitted bid documents, information regarding the evaluation of bids submitted to the County staff, product submittals and information and documentation on the award of all construction contracts to DWR. These documents will be provided to DWR within 30 days of being finalized and received by Tulare County.

10.6.4.2 Task 9 – Construction

There has been no construction work accomplished for the project to date. The only construction effort of the project will be the proper County approved abandonment or destruction of up to 100 selected wells. The tasks listed below would be accomplished as part of the project after it was selected for grant funding.

10.6.4.2.1 Subtask 9.1 – Mobilization and Site Preparation

Subtask 9.1.1 – Mobilization: This work task will include the mobilization for all demolition, construction, and site work authorized under the construction contract and all necessary equipment and materials to the project site. Once mobilization has begun, the contractor will assume responsibility for project site security. This work item also includes obtaining the required insurance, and securing all necessary licenses, permits, preparations of plans, and paying any potential permit fees for the entire project. This work task will also include contacting Underground Services Alert for a review and marking of the project site for existing utilities.

Subtask 9.1.2 – Worker Protection: This work item includes provisions for protection of workers from any hazards that may occur during execution of the work at all times, including but not limited to weekends, holidays, and non-working hours. This work item will include providing, as necessary, all shoring, sheeting and bracing for trench and excavation stabilization and safety.

Subtask 9.1.3 – Miscellaneous Facilities and Operations: This work item includes provisions for de-watering, maintaining drainage, traffic control, construction and removal of temporary security fencing, construction of staging areas, protection of existing facilities, general project clean up, and all costs for miscellaneous work shown and described in the Contract documents that is not included in other work items. Also this work item includes provision of all necessary facilities for the contractors employees to work on-site in compliance with State labor Code, such as portable bathroom facilities.

10.6.4.2.2 Subtask 9.2 – Project Construction

Task 9.2.1 – Destroy 100 Abandoned Wells: Destroy up to 100 disused wells in priority areas for abandonment. The contractor must prearrange deactivation of power through either a breaker on a control panel or deactivation of the electrical service by the utility. The following well destruction procedures shall be followed: (a) the well shaft shall be cleared of any obstructions. (b) A hole shall be excavated around the well casing to a depth of six feet (6') below the ground surface. This top six feet (6') of well casing shall be removed. (c) The shaft shall be filled to within twenty feet (20') of the top of the remaining shaft with inorganic fill material. (d) The top twenty feet (20') of the remaining shaft shall be filled with impervious material. Such impervious material shall be allowed to spill over into the excavation to form an effective seal. After such impervious material has set, the excavation shall be backfilled with native soil.

Where a well penetrates one or more aquifers containing water the quality of which is such that water in other aquifers will be significantly reduced if the waters are allowed to intermingle, in addition to the impervious seal, the Health Officer shall require that the shaft be sealed at such depths that no such intermingling of waters will occur through the shaft or through the annular space.

In destroying gravel packed wells, the casing shall be perforated opposite the area to be sealed. The sealing material shall then be placed within the casing, completely filling the portion adjacent to the area to be sealed and then forced out under pressure into the gravel envelope.

Task 9.2.2 – Construction Inspection: Site visits to the Project site to check on the construction of facilities as per the intended design at critical times; being present at concrete pours to test concrete slump and verify truck tags, and be available for compaction tests. In general it was envisioned that on average two visits per week would be necessary, and that field reports would be generated for each visit.

10.6.4.2.3 Subtask 9.3 – Performance Testing and Demobilization

Each individual well site will be inspected by a representative of the County Health Officer to confirm the satisfactory destruction of the well. No true performance testing will be conducted other than that the work was accomplished as per the construction contract documents. After the representative of the County Health Officer to confirm the satisfactory destruction of the well, the contractor will demobilize from the site.

Demobilization will include the removal of all equipment, materials, fencing, project signs, temporary bathroom facilities and debris from the job site and restoring the site to the condition previously agreed upon with the landowner. This work item shall also include the work to complete all items on punch list from the final inspection and to process final payment of project retention and establish start date for project warranty.

10.6.5 Budget Category (e): Environmental Compliance/ Mitigation/Enhancement

10.6.5.1 Task 10 – Environmental Compliance/Mitigation/ Enhancement

As was mentioned in Task 6 of this project, this project will not require CEQA documentation as all study and construction activities fall into ministerial actions or statutory exemptions. Therefore it is not anticipated that any costs associated with the project will be related to Environmental Compliance, Mitigation, or Enhancement.

10.6.6 Budget Category (f): Construction Administration

10.6.6.1 Task 11 – Construction Administration

Prior to construction, County staff will work with the contractor to verify that the material and equipment used in the destruction of the selected wells is consistent with applicable ordinance codes and that material suppliers are identified and approved. County staff will work with the selected contractors to verify that the well destruction work was accomplished by the contractor as per the contract, that the contractor bills the County appropriately for the work and that warranty over the work is established by date and

honored until the agreed upon expiration date has passed. This work will be coordinated with the representative of the County Health Officer that inspects each well site after it is destroyed. If unforeseen circumstances are encountered by the selected contractor, County staff will expeditiously work to make a determination whether the circumstance is a material change to the work described in the contract. If this is determined the contractor shall be compensated for this change as per County contract code.

ATTACHMENT 3 – WORK PLAN

APPENDIX A

Permeability Characterization Report for Plum Property, BSK Associates, January 2008

BSK

PERMEABILITY CHARACTERIZATION REPORT

Plum Property
Avenue 256 and Road 132
Tulare, California

BSK E07.077.01F

Prepared for:

Mr. Aaron Fukuda
Tulare Irrigation District
1350 West San Joaquin Avenue
Tulare, California 93724

January 17, 2008

BSK

567 W. Shaw Ave., Ste. B
Fresno, CA 93704
(559) 497-2880
FAX (559) 497-2886

TRANSMITTED VIA EMAIL THEN US MAIL
akf@tulareid.org

January 17, 2008 BSK E07.077.01F

Mr. Aaron Fukuda
Tulare Irrigation District
1350 West San Joaquin Avenue
Tulare, California 93724

SUBJECT: Permeability Characterization Report
Plum Property
Avenue 256 and Road 132
Tulare, California

Dear Mr. Fukuda:

BSK Associates (BSK) has completed a permeability characterization of the Plum Property (Site) located on the southwest corner of Avenue 256 (Oakdale Avenue) and Road 132, approximately 2 miles northeast of Tulare, California. The characterization was conducted at the request of the Tulare Irrigation District to assess the Site conditions for its potential use as a water storage/recharge basin.

BSK appreciates the opportunity to be of service to the Tulare Irrigation Department. If you have any questions concerning this report, please contact the undersigned at (559) 497-2880.

Sincerely,
BSK ASSOCIATES

George P. Hattrup
for Nathan M. Shwiyhat
Staff Engineer

PROFESSIONAL GEOLOGIST
MATTHEW WADE HUTSON
NO. 6746
STATE OF CALIFORNIA

Matthew W. Hutson, P.G.
Environmental Manager

Attachments

Distribution: Mr. Aaron Fukuda, Tulare Irrigation District (2 originals)
BSK (1 original + E-copy)

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FIGURES

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PERMEABILITY CHARACTERIZATION REPORT
PLUM PROPERTY
AVENUE 256 AND ROAD 123
TULARE, CALIFORNIA

1.0 INTRODUCTION

BSK Associates (BSK) conducted a permeability characterization of the property (Site) located at the southwest corner of Avenue 256 (Oakdale Avenue) and Road 132 in Tulare County, California (Figure 1). The Site encompasses 155 acres and is located approximately 2 miles northeast of the City of Tulare, California. Currently, the Site is used for agricultural purposes including row crops and orchards.

The Tulare Canal bisects the Site in a north-south direction. For the purposes of this report, the "western area" refers to that section of the Site that is situated to the west of the Tulare Canal, while the "eastern area" refers to the section of the Site that is situated to the east of the Tulare Canal.

The Site investigation was conducted at the request of the Tulare Irrigation District (TID) in accordance with the scope of services outlined in BSK Proposal No. EF07-2051, dated October 16, 2007. It is BSK's understanding that the results of this Site investigation will be used by the TID to assess the potential use of this Site as a water storage and/or recharge basin.

2.0 FIELD INVESTIGATION

BSK's scope of work included the advancement of exploratory borings, the collection of soil samples, laboratory testing, and preparation of this report to assess the permeability characteristics of the Site soils to aid in the design of a water storage/recharge basin.

BSK conducted the Site investigation on October 17, 19, 22 and 23, 2007, under the supervision of a BSK Staff Engineer. During the Site investigation exploratory soil borings were drilled within the property using a truck-mounted drill rig. A total of eight (8) borings were drilled to depths of approximately 25 to 51 feet beneath the existing ground surface (bgs). The location of the soil borings are shown on the Boring Location Map in Figure 2. Three borings were advanced using continuous sampling methods (Borings B-1, B-2, and B-8), while depth-discreet samples were collected from the remaining five borings (B-3, B-4, B-5, B-6, and B-7) using a 2-inch outside diameter sampler driven by a 140-lb hammer dropped from 30 inches. The number of blows required to drive the sampler for the final 12 inches were recorded as the blow count. Soil samples were collected from these borings at 2 ½ or 5-foot intervals.

The soil samples collected from the borings were logged according to the Unified Soil Classification System (USCS) and used to aid in the characterization of soils encountered. The samples were submitted to BSK Laboratories for testing. Twenty-one (21) soil samples were selected for "minus #200 sieve wash" testing (percent clay and silt particles) in accordance with ASTM D1140, and eight (8) soil samples were selected for permeability testing in accordance with ASTM D2434 (rigid-wall test) or ASTM D5084 (flexible-wall test). More details pertaining to the laboratory testing program are provided in Section 4.0.

3.0 FIELD RESULTS

Soils encountered during the exploratory drilling activities exhibited significant variation across the Site. Some sedimentary units were continuous across the Site; however, a number of units were discontinuous with variations in thickness observed.

A silty sand was encountered at the ground surface to depths ranging from approximately 3 to 16 feet bgs in each of the borings advanced onsite. The thickness of this silty sand unit was greater in borings advanced within the western area of the Site (Borings B-2, B-3, B-6 and B-8) in comparison to those advanced within the central and eastern areas of the Site (Borings B-1, B-4, B-5, and B-7).

A thick sand unit, approximately 10 to 15 feet in thickness, was encountered beneath the silty sand unit in exploratory borings advanced within the central and eastern areas of the Site (Borings B-1, B-4, B-5, and B-7). Some minor, fine grained (sandy silts and silty sands) sedimentary beds were encountered within the sand unit in Borings B-1 and B-7; however, these fine grained beds appeared to be relatively thin (less than 2 feet in thickness) and were laterally discontinuous between the exploratory borings. Based on observations made during the advancement of the exploratory borings, the thick sand unit appeared to be absent in the borings advanced within the western area of the site, beyond the location of Boring B-7.

Finer-grained sedimentary beds (sandy clay, sandy silt) were encountered in the borings advanced within the western area of the site at depths ranging from 13 to 22 feet bgs, and at depths ranging from 16 to 18 feet bgs (sandy clay, sandy silt) in borings advanced within the eastern area of the Site. These fine-grained sedimentary beds were up to 9 feet in thickness in the western area of the Site, and up to 11 feet in thickness in the eastern area of the Site.

Beneath the fine-grained sedimentary beds, a laterally-continuous silty sand unit was encountered in all borings. The silty sand unit was encountered at depths ranging from 22 to 27 feet beneath the western area of the Site, and depths ranging from 26 to 32 feet bgs beneath the eastern area of the Site. The sandy silt unit ranges in thickness from approximately 13 feet within the western area of the Site to approximately 8 feet within the eastern area of the Site.

A relatively thick (3 to 7 feet) clay bed was encountered in Borings B-5 and B-7, advanced within the north-central area of the Site. This clay unit was encountered at a depth of approximately 27 feet bgs in Boring B-7 and 34 feet bgs in Boring B-5. The presence of this clay bed within the northwestern area of the Site is unknown, since Boring B-8 was only advanced to a depth of approximately 25 feet bgs.

Below depths of 35 feet bgs, sedimentary beds encountered appeared to vary significantly, and were laterally discontinuous, consisting primarily of sand and silty sand, with lesser amounts of sandy clay and sandy silt.

Logs of the exploratory borings are provided in Appendix A. Soils encountered during the field investigation are shown on the Geologic Cross Section in Figure 3.

4.0 LABORATORY TEST RESULTS

Twenty-one (21) "minus #200 sieve wash" tests and eight (8) permeability tests were conducted on selected samples. Two of the permeability tests were conducted using the rigid-wall constant head method (ASTM D-2434), and six of permeability tests were conducted using the flexible-wall falling head test method (ASTM D-5084). The following table summarizes the results of the minus #200 sieve wash analyses, which are also shown on the Geologic Cross Section in Figure 3 and in the attached boring logs in Appendix A.

Boring Number	Sample Depth (feet bgs)	Percentage Fines (Silt and Clay)
B-1	7	43%
B-1	12	14%
B-1	20	80%
B-2	12	46%
B-2	19	50%
B-3	10	43%
B-3	17.5	58%
B-4	10	4%
B-4	15	3%
B-4	17.5	60%
B-5	7.5	3%
B-5	15	2%
B-5	20	65%
B-6	10	41%
B-6	15	60%
B-7	10	5%
B-7	15	3%
B-7	20	51%

Boring Number	Sample Depth (feet bgs)	Percentage Fines (Silt and Clay)
B-8	8	32%
B-8	14	31%
B-8	20	82%

The following table summarizes the results of the permeability tests, which are also shown on the Geologic Cross Section in Figure 3 and in the attached boring logs in Appendix A.

Boring Number	Sample Depth (feet bgs)	Permeability Rate
B-1	12 ½	2.66×10^{-6} cm/sec
B-2	7 ½	1.01×10^{-5} cm/sec
B-4	10	3.31×10^{-4} cm/sec
B-5	10	2.61×10^{-6} cm/sec

Laboratory reports of the analyses conducted are provided in Appendix B of this report.

5.0 CONCLUSIONS

Based on observations made during the field activities and results of analysis of samples collected from the exploratory borings, it appears that the eastern area of the Site (east of the Tulare Canal) could be developed for water infiltration purposes, assuming the initial approximately 6 feet of overlying silty sand is removed as part of the basin development. However, the soil conditions within the western area of the Site (west of the Tulare Canal) appear to be more conducive to water storage.

The limited soil investigation and laboratory findings indicate that only a few of the sedimentary units appear to be laterally continuous across the Site. The initial sedimentary unit encountered is a silty sand, which appears to range in thickness from 3 to 8 feet in the central and eastern areas of the Site, and up to 16 feet in the western area of the Site. Assuming that the entire Site would be developed as a water storage/recharge basin, it is assumed that the initial 6 feet of the silty sand unit would be removed. This would leave approximately 9 feet of the initial silty sand unit in-place within the western area of the Site, and almost completely remove the silty sand unit from the central and eastern areas of Site, with the exception of the location of Boring B-1, where approximately 2 feet of the silty sand would remain.

Removal of the upper 6 feet of material within the western area of the Site would leave approximately 5 to 9 feet of the initial silty sand unit in-place. The percentage of fines (silt and clay) in this unit ranged from approximately 32% to 46% across the Site. Based on laboratory permeability analysis of the initial silty sand unit, a percolation rate of approximately 0.01 to

0.17 acre-feet per acre per day (less than ¼ inch per day) could be achieved with a head of at least 4 feet.

Removal of the upper 6 feet of material within the central and eastern areas of the Site would almost completely remove the initial silty sand unit (with the exception of the area of Boring B-1) and expose the underlying sand unit. The sand unit within the central and eastern areas of the Site is approximately 11 to 14 feet in thickness with fines (silt and clay) percentages ranging from 2% to 14%. Based on laboratory permeability analysis of the sand unit, a percolation rate of approximately 6 to 12 acre-feet per acre per day (approximately 72 to 144 inches per day) could be achieved with a head of at least 4 feet.

Fine-grained (sandy silt, silty clay, and sandy clay) sedimentary beds were encountered at depths ranging from approximately 16 to 18 feet in all borings advanced across the Site. Fine sediments encountered at this depth generally ranged in thickness from 5 to 9 feet, and were typically composed of sandy silts with some sandy clays in the western area of the Site, and sandy/silty clays with some sandy silts in the eastern area of the Site.

Results of the minus #200 mesh tests conducted on samples collected from the fine-grained beds situated at depths between approximately 16 to 25 feet bgs ranged from 50% to 82% fines across the entire zone beneath the Site. These fine-grained sedimentary beds appear to be the limiting (least permeable) zone beneath the Site for percolating water. Based on laboratory permeability analysis of samples collected within the fine-grained zone, a percolation rate of approximately 0.004 to 0.006 acre-feet per acre per day could be achieved with a 6 to 8-foot head (less than ¼ inch per day). The amount of percolation would decrease proportionally for heads of less than 6 feet.

Although the fine-grained sediments present between 16 and 25 feet bgs represent a low-permeability zone that would reduce the percolation rate of water at that depth, the potential for these fine-grained sediments to significantly inhibit the percolation of water, should the Site be developed as a basin, would be significantly low within the eastern area of the Site. Assuming that the property was developed as a basin, and the initial 6 feet of material (silty sand) across the Site were removed, the exposed 10 to 11 feet of the sand unit within the eastern area of the Site would allow water to infiltrate fairly rapidly before reaching the finer-grained sedimentary zone. A significant volume of water could be held by the sand unit until either lateral flow or percolation through the fine-grained zone is achieved, thereby allowing adequate freeboard within the basin. It should be noted that the percolation rate may degrade over time due to the infiltration of silt and clay carried by water discharged into the basin, as well as from air borne sources. It should be anticipated that the bottom of the basin will need to be ripped periodically to enhance the percolation of stored water.

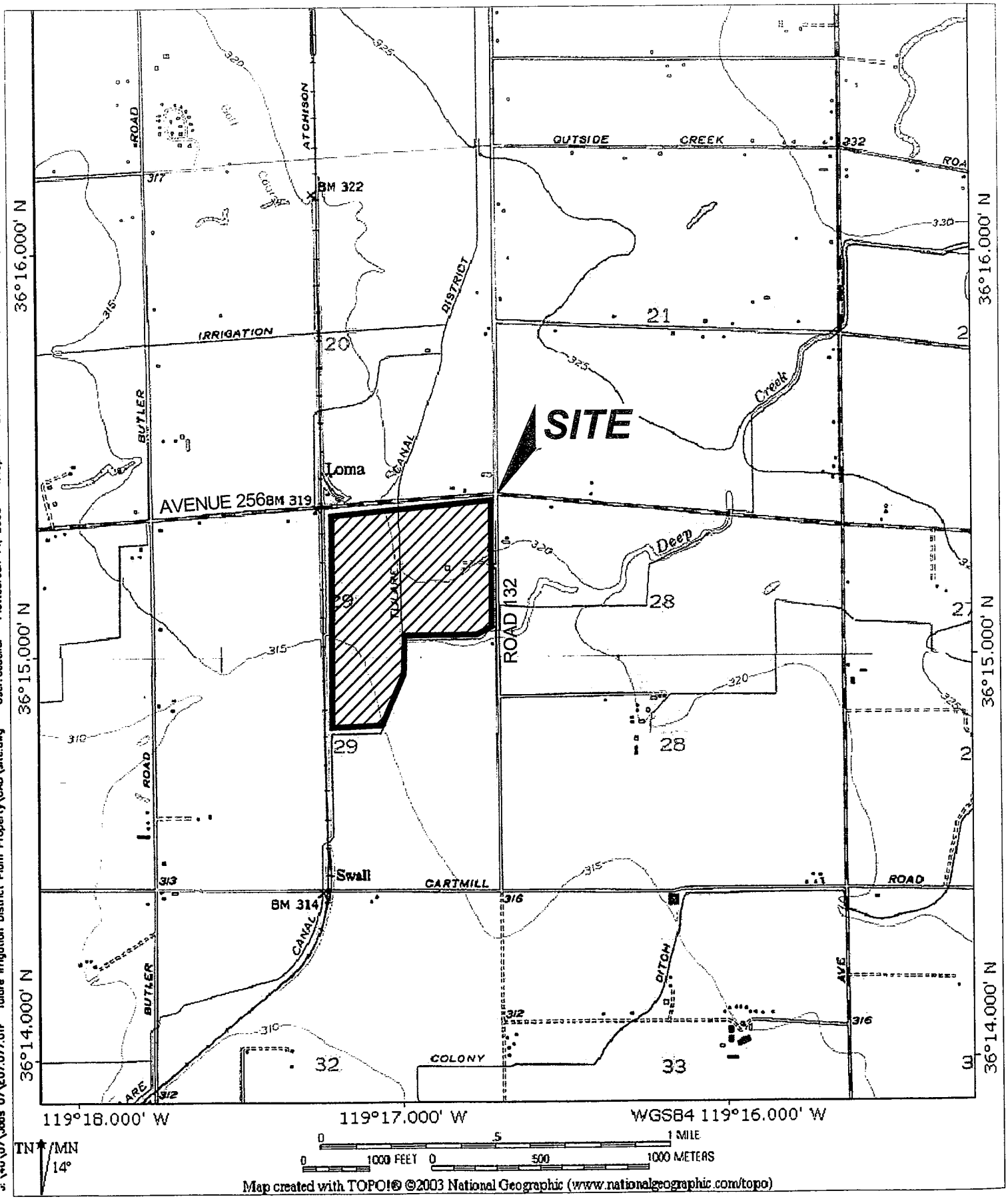
Within the western area of the Site, the presence of the fine-grained sediment zone from approximately 16 to 25 feet bgs, combined with the overlying sandy silt unit, provides a condition that is less likely to facilitate water infiltration in comparison to soil conditions within the eastern area of the Site. The presence of the silts and clays from 16 to 25 feet bgs inhibiting the infiltration of water at depth, combined with the overlying, low permeability silty sand unit, would create a condition that would be more conducive to water storage within the western area of the Site, rather than infiltration.

6.0 LIMITATIONS

This report has been prepared for the exclusive use of the Tulare Irrigation District in accordance with generally accepted geotechnical engineering practices in Tulare County at the time the service was performed. BSK's services were performed solely for the purpose of evaluating the soil conditions at the locations sampled. BSK's evaluation of these conditions is based upon data from a limited number of sampling locations. This data does not necessarily reflect variations which may occur between or beyond sampling locations.

BSK ASSOCIATES

FIGURES



BSK

SITE VICINITY MAP

Plum Property Permeability Assessment
Avenue 256 and Road 132
Tulare, California

E07.077.01F DJC site.dwg 10/30/07 FIGURE 1

LEGEND

APPROXIMATE LOCATION OF SOIL BORING

GEOLOGIC CROSS SECTION LINE

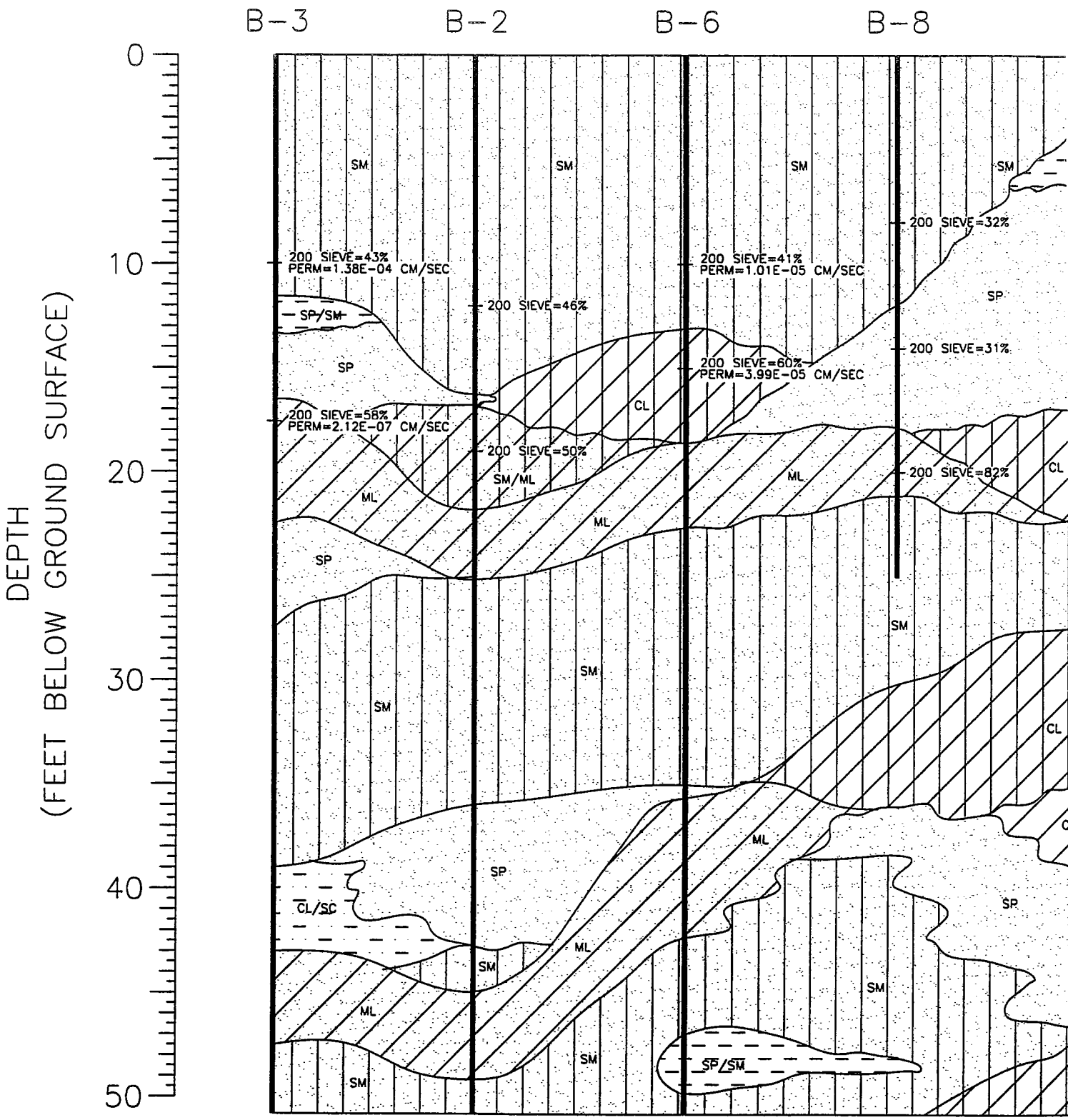
J:\40\07\Jobs 07\E07.077.01F Tulare Irrigation District Plum Property\CAD\site.dwg User: dcuellar Plotted: Jan 16, 2008 - 3:24pm Last Save: Jan 16, 2008 - 3:23p...

BSK

BORING LOCATION MAP

Plum Property Permeability Assessment
Avenue 256 and Road 132
Tulare, California

E07.077.01F	DJC	site.dwg	10/30/07	FIGURE 2


B-3
B-2
B-6
B-8
DEPTH
(FEET BELOW GROUND SURFACE)
0
10
20
30
40
50
SM
SP
SP/SM
CL
ML
SM/ML
CL/SC
200 SIEVE=43%
PERM=1.38E-04 CM/SEC
200 SIEVE=46%
200 SIEVE=41%
PERM=1.01E-05 CM/SEC
200 SIEVE=32%
200 SIEVE=31%
200 SIEVE=60%
PERM=3.99E-05 CM/SEC
200 SIEVE=58%
PERM=2.12E-07 CM/SEC
200 SIEVE=50%
200 SIEVE=82%

BSK

APPENDIX A

Boring Logs

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-1

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 1 of 2
Job Number: E07.077.01F
Elevation:

Driller: BSK Associates
Start Date: 10/17/07
Drill Method: BK-81 w/8" Hollow Stem Auger
Finish Date: 10/17/07
Sample Method: Continuous Sampling
Logged By: N. Shwiyhat (mlt)
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0								
2						**Silty SAND (SM)** Brown, fine to medium grained, moist, medium dense		
4								
6								-200 Sieve =43%
8						Clayey silt seam at 8.5' to 9'		
10								
12						**SAND (SP)** Yellow-brown, fine to medium grained, Silty sand seam @ 12'		-200 Sieve =14%
14								
16						Sandy silt seam @ 15' to 17'		
18								
20						**Silty CLAY (CL)** Brown, moist, moderate plasticity, stiff		-200 Sieve =80%
22						**Sandy SILT (ML)** Brown, fine grained, with clay, moist		
24						**Silty CLAY (CL)** Brown, moist, slight to moderate plasticity, silty sand seams present		
26						**Silty SAND (SM)** Orange-brown, fine to medium grained, with trace clay, moist		
28						Increase in fines and moisture @ 28.5'		

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559) 497-2880
(559) 497-2886 FAX

Log of Boring B-1

Tulare Irrigation District
Plum Property-Permeability Asst

Sheet 2 of 2
Job Number: E07.077.01F
Elevation:

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
31						**Sandy SILT (ML)** Olive-brown, with trace fine sand, moist, plastic, silty sand seams		
33						**Silty SAND (SM)** Orange-brown, fine to medium grained, moist, increased silt @ 35'		
35						4" silty clay/clay silt seam @ 36'		
37						Trace of clay @ 38'		
39								
41						**Sandy SILT (ML)** Orange-brown, trace of sand, moist, slightly plastic, soft layer		
43						**SAND/Silty SAND (SP/SM)** Orange-brown, fine to coarse grained, moist		
45						**Silty SAND (SM)** Brown, fine grained, moist, increase in fines		
47								
49						**SAND (SP)** Orange-brown, fine to medium grained, trace of silt, trace of gravel		
51						Boring completed at 51.0' bgs Groundwater not encountered Boring backfilled with soil cuttings on 10-17-07		
53								
55								
57								

BSK
567 W. Shaw Ave
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-2

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 1 of 2
Job Number: E07.077.01F
Elevation:

Driller: BSK Associates
Start Date: 10/17/07
Drill Method: BK-81 w/8" Hollow Steam Auger
Finish Date: 10/17/07
Sample Method: Continuous Sampling
Logged By: N. Shwiyhat (mlt)
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0								
2						**Silty SAND (SM)** Yellow-brown, fine to medium grained, moist, medium dense		
4						Dark-brown, small diameter roots (<1/4") @ 4'		
6						Brown, less moist @ 6'		
8								
10						Fines increase @ 10'		
12						Grades to dense @ 12'		-200 Sieve = 46%
14								
16						**SAND (SP)** Yellow-brown, fine to medium grained, moist		
18						**Silty SAND/Sandy SILT (SM/ML)** Yellow-brown, trace of clay, moist, stiff, slightly plastic, alternating silty sand and sandy silt layers to 20'		-200 Sieve = 50%
20								
22						**Sandy SILT (ML)** Yellow-brown with orange, with trace of clay, moist, medium stiff, increased sand content @ 23'		
24						Increased clay @ 25'		
26						**Silty SAND (SM)** Orange-brown with red orange streaks, fine grained, moist		
28						Less fines @ 29'		

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559) 497-2880
(559) 497-2886 FAX

Log of Boring B-2

Tulare Irrigation District
Plum Property
Permeaility Assessment

Job Number: E07.077.01F
Elevation:

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
31						**Silty SAND (SM)** Orange-brown with red orange streaks, fine grained, moist		
33						Thin sandy silt layer @ 33'		
35						Trace of clay @ 35' Grades to fine orange-brown less fines @ 36'		
37								
39						**SAND (SP)** Orange-brown, fine to medium grained, trace of silt, moist, micaceous		
41								
43						**Silty SAND (SM)** Brown, fine grained, with trace clay, moist		
45						**Clayey SILT (ML)** Brown, with trace fine sand, moist, slightly plastic, medium stiff		
47								
49						**Silty SAND (SM)** Orange brown, fine grained, moist, medium dense		
51						Boring completed at 51.0' bgs Groundwater not encountered Boring backfilled with soil cuttings on 10-17-07		
53								
55								
57								

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-3

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 1 of 2
Job Number: E07.077.01F
Elevation:

Driller: BSK Associates — **Start Date:** 10/19/07

Drill Method: BK-81 w/8" Hollow Stem Auger — **Finish Date:** 10/19/07

Sample Method: 2" O.D. Liner Tube Sample — **Logged By:** N. Shwiyhat (mlt)

Borehole Diameter: 8" — **Water Level:** Not encountered — **Checked By:** M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0								
2						**Silty SAND (SM)** Brown, fine grained, with trace clay, moist, medium dense		
4		25						
6		24				Less fines		
8								
10		16				Increase in moisture, micaceous		-200 Sieve =43% Permeability = 1.38 E -04 CM/SEC
12		17				**SAND/Silty SAND (SP/SM)** Orange-brown, fine to medium grained, moist, medium dense		
14		34				**SAND (SP)** Yellow-grey-brown, fine ro coarse grained, dry, medium dense		
16								
18		37				**Sandy SILT (ML)** Yellow-grey brown, medium grained, with trace clay, moist, stiff, interlaced sand to silty sand seams		-200 Sieve =58% Permeability = 2.12 E -07 CM/SEC
20		41				Stiff @ 20'		
22								
24						**SAND (SP)** Grey-brown, fine to medium grained, with trace clay, dry, medium dense		
26								
28						**Silty SAND (SM)** Yellow-grey, fine grained, with trace clay, moist, medium dense		
30		52						

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559) 497-2880
(559) 497-2886 FAX

Log of Boring B-3

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 2 of 2
Job Number: E07.077.01F
Elevation:

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
32		52				**Silty SAND (SM)** Yellow-grey, fine grained, with trace clay, moist, medium dense		
34		50-6"				Red-orange streaks, less fines, very dense		
36								
38								
40		34				**Sandy CLAY/Clayey SAND (CL/SC)** Yellow-brown, fine grained, moist, stiff, slightly plastic		
42								
44		41				**Sandy SILT (ML)** Yellow-brown, moist		
46								
48						**Silty SAND (SM)** Orange-brown, with trace clay, moist, dense to very dense		
50		71						
52						Boring completed at 50.5' bgs Groundwater not encountered Boring backfilled with soil cuttings on 10/19/07		
54								
56								
58								
60								

BSK
567 W. Shaw Ave
Fresno, CA 93704
(559)-497-2880
(559) 497-2886 FAX

Log of Boring B-4

Tulare Irrigation District
Plum Property
Permeabuility Assessment

Sheet 1 of 2
Job Number: E07.077.01F
Elevation:

Driller: BSK Associates
Start Date: 10/19/07
Drill Method: BK-81 w/8" Hollow Stem Auger
Finish Date: 10/19/07
Sample Method: 2" O.D. Liner Tube Sampler
Logged By: N. Shwiyhat (mlt)
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						**Silty SAND (SM)** Brown, fine to medium grained, moist		
2								
4		18				**SAND (SP)** Yellow brown with black, fine to coarse grained, dry, medium dense		
6		16				Increase in fine sand fraction, fine to medium grained		
8								
10		33						-200 Sieve =4% Permeability = 1.38 E -02 CM/SEC
12		37						
14								-200 Sieve =3%
16						**Sandy CLAY (CL)** Brown, moist to wet, medium stiff, slight to moderate plasticity		
18		17						-200 Sieve =60% Permeability = 1.09 E -06 CM/SEC
20		31						
22								
24		38				Less clay, increase in fine sand		
26								
28						**SAND/Silty SAND (SP/SM)** Yellow brown, fine grained, moist, medium dense		
30		36						

BSK
567 W. Shaw Ave.
Fresno, CA 93704
(559) 497-2880
(559) 497-2886 FAX

Log of Boring B-4

Tulare Irrigation District
Plum Property
Permeability Assessment

Job Number: E07.077.01F

Elevation:

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
32		36						
34						**Silty SAND (SM)** Orange brown, fine grained, moist, medium dense		
36		25						
38						**SAND/Silty SAND (SP/SM)** Brown, fine to medium grained, moist, medium dense		
40		29						
42						**Sandy SILT w/Clay (ML)**		
44						**SAND (SP)** Fine to coarse grained, moist		
46		39				**Sandy SILT/Clayey SAND (ML/SC)** Red brown, fine grained, moist, stiff, moderate plasticity		
48								
50		45				**Sandy SILT (ML)** Brown, fine grained, moist, slightly plastic		
52						Boring completed at 50.5' bgs Groundwater not encountered Boring backfilled with soil cuttings on 10/19/07		
54								
56								
58								
60								

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Log of Boring B-5

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 1 of 2
Job Number: E07.077.01F
Elevation:

Driller: BSK Associates
Start Date: 10/19/07
Drill Method: BK-81 w/8" Hollow Stem Auger
Finish Date: 10/19/07
Sample Method: 2" O.D. Liner Tube Sampler
Logged By: N. Shwiyhat (mlt)
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0								
2						**Silty SAND (SM)** Brown, fine to medium grained, moist		
4		17				**SAND (SP)** Brown, fine to medium grained, moist, medium dense		
6		17				Dry		-200 Sieve =3% Permeability = 1.19 E -02 CM/SEC
8								
10		20				Increase in medium sand fraction, dry		
12		16						
14		35				Fine grained		-200 Sieve =2%
16								
18						**Silty SAND (SM)** Fine to medium grained		
20		37				**Sandy CLAY (CL)** Brown, fine grained, moist, stiff, moderate plasticity		-200 Sieve =65% Permeability = 1.45 E -06 CM/SEC
22								
24		27				**Sandy SILT (ML)** Olive-brown with orange streaks, fine grained, with trace clay, moist, slightly plastic		
26								
28						**Silty SAND (SM)** Orange-brown, fine grained, with trace clay, moist, medium dense		
30		33						

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Log of Boring B-5

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 2 of 2
Job Number: E07.077.01F
Elevation:

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
32		33				**Silty SAND (SM)** Orange-brown, fine grained, with trace clay, moist, medium dense		
34								
		28				**Sandy CLAY (CL)** Yellow-brown, fine to medium grained, moist, medium stiff, slight to moderate plasticity		
36								
38						**SAND (SP)** Yellow-brown, fine to medium grained, moist 6" sandy clay layer @39.5' Grades with silt		
40		72						
42						**Silty SAND (SM)** Fine grained, with clay, moist		
44		62				**Sandy CLAY (CL)** Olive-brown, with silt, moist, moderate plasticity, very stiff		
46								
48						**SAND (SP)** Yellow-grey-brown, fine to coarse grained, moist, dense		
50		62						
52						Boring completed at 50.5' bgs Groundwater not encountered Boring backfilled with soil cuttings on 10-19-07		
54								
56								
58								
60								

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Log of Boring B-6

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 1 of 2
Job Number: E07.077.01F
Elevation:

Driller: BSK Associates
Start Date: 10/22/07

Drill Method: BK-81 w/8" Hollow Stem Auger
Finish Date: 10/22/07

Sample Method: 2" O.D. Liner Tube Sampler
Logged By: N. Shwyihat (mlt)

Borehole Diameter: 8"
Water Level: Not encountered
Checked By: M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						**Silty SAND (SM)** Brown, fine grained, moist, medium dense		
2								
4	■	31						
6						Increase in moisture content		
8	■	19						
10	■	28				Increase in fines, some clay, slightly plastic		-200 Sieve =41% Permeability = 1.01 E -05 CM/SEC
12	■	21						
14	■	19				**Sandy CLAY (CL)** Brown, fine grained, moist, stiff, moderate plasticity		-200 Sieve =60% Permeability = 3.99 E -05 CM/SEC
16								
18	■	11				Grades to yellow-brown, increase in silt, less sand		
20	■	15				**Sandy SILT (ML)** Yellow-grey brown, fine grained, with clay, moist, discontinuous cementation		
22								
24	■	23				**Silty SAND (SM)** Yellow-brown with red, fine grained, with trace clay, moist, medium dense		
26								
28						Sandy silt layers		

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Log of Boring B-6

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 2 of 2
Job Number: E07.077.01F
Elevation:

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
30		62				**Silty SAND (SM)** Yellow-brown with red, fine grained, with trace clay, moist, medium dense Red brown, fine to medium grained, moist trace of clay 4-6" sand layer, fine to coarse grained		
32								
34		73						
36						**Sandy SILT (ML)** Olive-grey with red brown streaks, with trace fine sand, moist, very hard		
38								
40		57				Grades to olive-brown, increase in fine sand, hard		
42								
44		57				**Silty SAND (SM)** Brown, fine to medium grained, moist, dense		
46								
48						**SAND/Silty SAND (SP/SM)** Brown, fine to medium grained, dense		
50		60				**Silty SAND (SM)** Orange brown, fine to medium grained, moist, dense		
52						Boring completed at 50.5' bgs Groundwater not encountered Boring backfilled with soil cuttings on 10/22/07		
54								
56								

BSK 567 W. Shaw Ave Fresno, CA 93704 (559)-497-2880 (559) 497-2886 FAX	*Log of Boring B-7* Tulare Irrigation District Plum Property Permeability Assessment	Sheet 1 of 2
		Job Number: E07.077.01F
		Elevation:
Driller: BSK Associates		Start Date: 10/22/07
Drill Method: BK-81 w/8" Hollow Stem Auger		Finish Date: 10/22/07
Sample Method: Continuous Sampling		Logged By: N. Shwyihat (mlt)
Borehole Diameter: 8"	Water Level: Not encountered	Checked By: M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						**Silty SAND (SM)** Brown, fine to medium grained, moist		
2								
4		22				**SAND/Silty SAND (SM/SP)** Brown, fine to medium grained, with trace silt, moist, medium dense		
6		24				**SAND (SP)** Grey-brown, fine to medium grained, dry, medium dense		
8								
10		16						-200 Sieve = 5%
12		21				Fine grained		
14		18				Fine to medium grained, trace of silt		-200 Sieve = 3%
16								
18		11				**Silty CLAY (CL)** Brown, with trace sand, moist, medium stiff, moderate plasticity		
20		17						-200 Sieve = 51%
22								
24		24				**Sandy CLAY (CL)** Brown, moist, medium stiff, slight to moderate plasticity		
26						**Silty SAND (SM)** Yellow-brown, fine grained, moist, medium dense		
28						**Sandy CLAY (CL)** Brown, moist, stiff, moderate plasticity		
30		26						

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Log of Boring B-7

Tulare Irrigation District
Plum Property
Permeability Assessment

Job Number: E07.077.01F

Elevation:

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
32		26				**Sandy CLAY (CL)** Brown, moist, stiff, moderate plasticity		
34								
36		50				**CLAY (CH)** Dark-olive-brown with white streaks, moist, highly plastic, hard		
38						Increase in moisture, stiff to medium stiff		
40		26				**SAND (SP)** Orange-brown, fine to coarse grained, moist, medium dense		
42								
44		27				Grades to fine grained, trace of gravel, increase in moisture		
46								
48						**Sandy CLAY (CL)** Olive-brown, fine grained, with silt, moist, stiff, moderate plasticity		
50		40						
52						Boring completed at 50.5' bgs Groundwater not encountered Boring backfilled with soil cuttings on 10/17/07		
54								
56								
58								
60								

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Log of Boring B-8

Tulare Irrigation District
Plum Property
Permeability Assessment

Sheet 1 of 1
Job Number: E07.077.01F
Elevation:

Driller: BSK Associates
Start Date: 10/22/07
Drill Method: BK-61 w/8" Hollow Stem Auger
Finish Date: 10/22/07
Sample Method: Continuous Sampling
Logged By: N. Shwiyhat (mlt)
Borehole Diameter: 8"
Water Level: Not encountered
Checked By: M. Hutson

Depth (feet)	Sample Type	Blow Count (blows/ft.)	Dry Density (pcf)	Moisture (%)	Graphic Log	Materials Description	Elevation (feet)	Remarks
0						**Silty SAND (SM)** Brown, fine to medium grained, moist, micaceous		
2								
4						Grades to fine grained, trace of clay, slightly plastic, increased fines		
6								
8						Fine to medium grained		-200 Sieve = 32%
10						Less clay		
12						Yellow-brown, increased silt		
14						Decreased fines		-200 Sieve = 31%
16								
18								
20						**Sandy SILT (ML)** Brown, with clay, moist, stiff, slightly plastic		-200 Sieve = 82%
22						**Silty SAND (SM)** Yellow-brown, fine to medium grained, moist		
24						Grades to brown, fine grained		
26						Boring terminated at 25' bgs Goundwater not encountered Boring backfilled with soil cuttings on 10/17/07		
28								
30								

APPENDIX B

Laboratory Reports

BSK

BSK and ASSOCIATES, Geotechnical Consultants

Minus #200 Sieve Wash

(% Fines)

BSK Project Name: TID Plum Property
BSK Project No.: E0707701F

Report Date: 11/14/07
Sample Date:
Test Date: 11/9/07

	Before WASH:			After WASH:		*Moisture Content:*		**-#200 Sieve:**	
Sample No.	Wet Weight + Tare	Tare Weight	Dry Weight + Tare	Dried Weight + Tare	Tare Weight	*Water Weight*	*% Moisture*	*Weight Passing*	**% Passing #200 Sieve**
B-1 @ 7'	310.5	0	271.5	153.7	0	39.0	**14.4%**	117.8	**43%**
B-1 @ 12'	366.6	0	345.8	297.6	0	20.8	**6.0%**	48.2	**14%**
B-1 @ 20'	465.8	0	375.2	75.9	0	90.6	**24.1%**	299.3	**80%**
B-2 @ 12'	330.4	0	297.8	161.6	0	32.6	**10.9%**	136.2	**46%**
B-2 @ 19'	380.8	0	324.1	161.6	0	56.7	**17.5%**	162.5	**50%**
B-3 @ 10'	358.9	0	317.1	181.4	0	41.8	**13.2%**	135.7	**43%**
B-3 @ 17.5'	383.4	0	325.3	136.1	0	58.1	**17.9%**	189.2	**58%**
B-4 @ 10'	115.1	0	110.5	106.5	0	4.6	**4.2%**	4.0	**4%**
B-4 @ 15'	455.2	0	434.2	422.8	0	21.0	**4.8%**	11.4	**3%**
B-4 @ 17.5'	346.4	0	283.5	114.1	0	62.9	**22.2%**	169.4	**60%**
B-5 @ 7.5'	111.9	0	107.9	104.7	0	4.0	**3.7%**	3.2	**3%**
B-5 @ 15'	375.8	0	359.9	353.1	0	15.9	**4.4%**	6.8	**2%**
B-5 @ 20'	289.3	0	247.7	87.6	0	41.6	**16.8%**	160.1	**65%**
B-6 @ 10'	307.5	0	273.7	162.1	0	33.8	**12.3%**	111.6	**41%**
B-6 @ 15'	366	0	311.5	124.0	0	54.5	**17.5%**	187.5	**60%**
B-7 @ 10'	457.8	0	421.0	401.2	0	36.8	**8.7%**	19.8	**5%**
B-7 @ 15'	403.1	0	388.3	377.3	0	14.8	**3.8%**	11.0	**3%**
B-7 @ 20'	285.7	0	244.8	118.9	0	40.9	**16.7%**	125.9	**51%**
B-8 @ 8'	407.1	0	365.9	247.3	0	41.2	**11.3%**	118.6	**32%**
B-8 @ 14'	274.8	0	247.0	171.0	0	27.8	**11.3%**	76.0	**31%**
B-8 @ 20'	379.1	0	312.9	57.0	0	66.2	**21.2%**	255.9	**82%**

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CONSTANT VOLUME FLEXIBLE-WALL PERMEABILITY TEST (ASTM D-5084)		
PROJECT NAME :	Tulare Irrigation District - Plum Property	
BSK JOB NO. :	E0707701F	
Report Date:	11/14/2007	
Sample Date:	10/19/2007	
Sample I.D.:	B-3 @ 10'	
Soil Description:	Silty Sand, Fine to Medium, Brown	
STAGE	INITIAL	FINAL
Wet Weight (gm)	171.0	179.7
Dry Weight (gm)	151.1	151.1
Moisture Content (%)	13.2	18.9
Average Length (in.)	1.942	1.892
Average Diameter (in.)	1.898	1.873
Total Volume, V_t (ft^3)	3.18E-03	3.02E-03
Volume of Water, V_w (ft^3)	7.02E-04	1.01E-03
Volume of Solids, V_s (ft^3)	1.97E-03	1.97E-03
Volume of Air, V_a (ft^3)	5.02E-04	3.23E-05
Volume of Voids, V_v (ft^3)	1.20E-03	1.04E-03
Degree of Saturation, S (%)	58.3	96.9
Dry Density (lb/ft^3)	104.7	110.3
Void Ratio, e	0.61	0.53
Porosity, N	37.9	34.5
"B" Parameter	0.95	
Back Pressure (psi)	20	
Effective Pressure (psi)	2	
Permeability (cm/sec)	1.38E-04	

NOTES :

1) A 0.005N solution of CaSO4 was used as permeant

2) Porosity was based on an assumed specific gravity of 2.70

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ASSOCIATES

CONSTANT VOLUME FLEXIBLE-WALL PERMEABILITY TEST (ASTM D-5084)		
PROJECT NAME :	Tulare Irrigation District - Plum Property	
BSK JOB NO. :	E0707701F	
Report Date:	11/14/2007	
Sample Date:	10/19/2007	
Sample I.D.:	B-3 @ 17.5'	
Soil Description:	Sandy Clay w/ Silt, Fine, Brown	

STAGE	INITIAL	FINAL
Wet Weight (gm)	193.4	194.2
Dry Weight (gm)	164	164
Moisture Content (%)	17.9	18.4
Average Length (in.)	1.966	1.956
Average Diameter (in.)	1.904	1.905
Total Volume, V_t (ft^3)	3.24E-03	3.23E-03
Volume of Water, V_w (ft^3)	1.04E-03	1.07E-03
Volume of Solids, V_s (ft^3)	2.14E-03	2.14E-03
Volume of Air, V_a (ft^3)	5.75E-05	1.73E-05
Volume of Voids, V_v (ft^3)	1.09E-03	1.08E-03
Degree of Saturation, S (%)	94.8	98.4
Dry Density (lb/ft^3)	111.5	111.9
Void Ratio, e	0.51	0.51
Porosity, N	33.8	33.6
"B" Parameter	0.95	
Back Pressure (psi)	30	
Effective Pressure (psi)	2	
Permeability (cm/sec)	2.12E-07	

Notes:

1) A 0.005N solution of CaSO4 was used as permeant

2) Porosity was based on an assumed specific gravity of 2.70

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HYDAULIC CONDUCTIVITY TEST
CONSTANT HEAD METHOD- ASTM D-2434

REPORT DATE: 11/14/2007

BSK PROJECT NAME: Tulare Irrigation District - Plum Property
BSK PROJECT NO.: E0707701F

Sample I.D.: B-4 @ 10'
Visual Classification: Sand, Fine to Medium Grained, Gray Brown
Sampled By: N. Shwiyhat
Sample Date: 10/19/2007
Tested By: N. Shwiyhat
Test Date: 11/9/2007

Density Determination:

Diameter, cm:	**4.88**
Tube & Soil Gross wt., gm	649.5
Tube wt., gm	181.8
Wet Soil wt., gm	**467.7**
Tube Length, cm	15.24
Tare Length,cm	0.00
Sample Length,cm	15.24
Dry Density, g/cm^3	**1.58**

Moisture Detrmination:

Pan + Wet Soil wt., gm	**115.1**
Pan wt., gm	**0.0**
Pan + dry wt., gm	**110.5**
% moisture Content:	4.2

Dry Density, pcf **98.4**

Hyraulic Conductivity Specimen:

Diameter, cm	**4.88**
Tube Length, cm	**15.24**
Tare Length, cm	**3.73**
Specimen Length (L), cm	11.51

Area (A), cm^2: 18.68

Trial Number	Constant Head, h, cm	Elapsed Time, t (s)	Outflow Volume Q, cm^3	Water Temp., T, °C	K_T	K_{20}
1	40.64	100	100.0	23.0	1.52E-02	1.41E-02
2	40.64	100	97.0	23.0	1.47E-02	1.37E-02
3	40.64	100	96.0	23.0	1.46E-02	1.36E-02
4	40.64	100.00	97.0	23.0	1.47E-02	1.37E-02
Average Hydraulic Conductivity, cm/sec				**K_{20} =**	**1.38E-02**	

Properties of Distilled Water

Temp	Density	Viscosity	Tem, C	Density	Viscosity	Tem, C	Density	Viscosity
°C	g/cm^3	Poise	°C	g/cm^3	Poise	°C	g/cm^3	Poise
4	1.00000	0.01567	22	0.9978	0.00958	29	0.99598	0.00818
16	0.99897	0.01111	23	0.99757	0.00936	30	0.99568	0.00801
17	0.9988	0.01083	24	0.99733	0.00914			
18	0.99862	0.01056	25	0.99708	0.00894			
19	0.99844	0.0103	26	0.99682	0.00874			
20	0.99823	0.01005	27	0.99655	0.00855			
21	0.99802	0.00981	28	0.99627	0.00836			

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CONSTANT VOLUME FLEXIBLE-WALL PERMEABILITY TEST (ASTM D-5084)		
PROJECT NAME :	Tulare Irrigation District - Plum Property	
BSK JOB NO. :	E0707701F	
Report Date:	11/14/2007	
Sample Date:	10/19/2007	
Sample I.D.:	B-4 @ 17.5'	
Soil Description:	Sandy Silt w/ Clay, Fine, Brown	

STAGE	INITIAL	FINAL
Wet Weight (gm)	178.7	182
Dry Weight (gm)	150.4	150.4
Moisture Content (%)	18.8	21.0
Average Length (in.)	1.880	1.876
Average Diameter (in.)	1.898	1.902
Total Volume, V_t (ft^3)	3.08E-03	3.09E-03
Volume of Water, V_w (ft^3)	9.99E-04	1.12E-03
Volume of Solids, V_s (ft^3)	1.97E-03	1.97E-03
Volume of Air, V_a (ft^3)	1.14E-04	5.55E-06
Volume of Voids, V_v (ft^3)	1.11E-03	1.12E-03
Degree of Saturation, S (%)	89.7	99.5
Dry Density (lb/ft^3)	107.6	107.3
Void Ratio, e	0.57	0.57
Porosity, N	36.2	36.3
"B" Parameter	0.95	
Back Pressure (psi)	30	
Effective Pressure (psi)	2	
Permeability (cm/sec)	1.09E-06	

Notes:

1) A 0.005N solution of CaSO4 was used as permeant

2) Porosity was based on an assumed specific gravity of 2.70

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Associates: 1415 Tuolumne Street. Fresno, CA. 93706- PH: (559) 497-2868 Fax: (559) 485-1863

HYDAULIC CONDUCTIVITY TEST
CONSTANT HEAD METHOD- ASTM D-2434

REPORT DATE: 11/14/2007

BSK PROJECT NAME: Tulare Irrigation District - Plum Property
BSK PROJECT NO.: E0707701F

Sample I.D.: B-5 @ 7.5'
Visual Classification: Sand, Fine to Medium Grained
Sampled By: N. Shwiyhat
Sample Date: 10/19/2007
Tested By: N. Shwiyhat
Test Date: 11/9/2007

Density Determination:

Diameter, cm:	**4.89**
Tube & Soil Gross wt., gm	621.1
Tube wt., gm	182.2
Wet Soil wt., gm	**438.9**
Tube Length, cm	15.24
Tare Length,cm	0.00
Sample Length,cm	15.24
Dry Density, g/cm^3	**1.48**

Moisture Detrmination:

Pan + Wet Soil wt., gm	**111.9**
Pan wt., gm	**0.0**
Pan + dry wt., gm	**107.9**
% moisture Content:	3.7

Dry Density, pcf **92.3**

Hyraulic Conductivity Specimen:

Diameter, cm	**4.89**
Tube Length, cm	**15.24**
Tare Length, cm	**3.76**
Specimen Length (L), cm	11.48

Area (A), cm^2: 18.78

Trial Number	Constant Head, h, cm	Elapsed Time, t (s)	Outflow Volume Q, cm^3	Water Temp., T, °C	K_T	K_{20}
1	40.64	100	85.0	23.0	1.28E-02	1.19E-02
2	40.64	100	85.0	23.0	1.28E-02	1.19E-02
3	40.64	100	84.0	23.0	1.26E-02	1.18E-02
Average Hydraulic Conductivity, cm/sec				**K_{20} =**	**1.19E-02**	

Properties of Distilled Water

Temp	Density	Viscosity	Tem, C	Density	Viscosity	Tem, C	Density	Viscosity
°C	g/cm^3	Poise	°C	g/cm^3	Poise	°C	g/cm^3	Poise
4	1.00000	0.01567	22	0.9978	0.00958	29	0.99598	0.00818
16	0.99897	0.01111	23	0.99757	0.00936	30	0.99568	0.00801
17	0.9988	0.01083	24	0.99733	0.00914			
18	0.99862	0.01056	25	0.99708	0.00894			
19	0.99844	0.0103	26	0.99682	0.00874			
20	0.99823	0.01005	27	0.99655	0.00855			
21	0.99802	0.00981	28	0.99627	0.00836			

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CONSTANT VOLUME FLEXIBLE-WALL PERMEABILITY TEST (ASTM D-5084)		
PROJECT NAME :	Tulare Irrigation District - Plum Property	
BSK JOB NO. :	E0707701F	
Report Date:	11/14/2007	
Sample Date:	10/19/2007	
Sample I.D.:	B-5 @ 20'	
Soil Description:	Sandy Clay, Fine Brown	
STAGE	INITIAL	FINAL
Wet Weight (gm)	195.2	196
Dry Weight (gm)	170	170
Moisture Content (%)	14.8	15.3
Average Length (in.)	1.944	1.940
Average Diameter (in.)	1.893	1.887
Total Volume, V_t (ft^3)	3.17E-03	3.14E-03
Volume of Water, V_w (ft^3)	8.89E-04	9.17E-04
Volume of Solids, V_s (ft^3)	2.22E-03	2.22E-03
Volume of Air, V_a (ft^3)	5.47E-05	1.07E-06
Volume of Voids, V_v (ft^3)	9.44E-04	9.19E-04
Degree of Saturation, S (%)	94.2	99.9
Dry Density (lb/ft^3)	118.2	119.2
Void Ratio, e	0.42	0.41
Porosity, N	29.8	29.3
"B" Parameter	0.95	
Back Pressure (psi)	80	
Effective Pressure (psi)	2	
Permeability (cm/sec)	**1.45E-06**	

Notes:

1) A 0.005N solution of CaSO4 was used as permeant

2) Porosity was based on an assumed specific gravity of 2.70

BSK

ASSOCIATES

CONSTANT VOLUME FLEXIBLE-WALL PERMEABILITY TEST (ASTM D-5084)		
PROJECT NAME :	Tulare Irrigation District - Plum Property	
BSK JOB NO. :	E0707701F	
Report Date:	11/14/2007	
Sample Date:	10/22/2007	
Sample I.D.:	B-6 @ 10'	
Soil Description:	Silty Sand, Trace of Clay, Fine, Brown	
STAGE	INITIAL	FINAL
Wet Weight (gm)	179.0	186.6
Dry Weight (gm)	159.4	159.4
Moisture Content (%)	12.3	17.1
Average Length (in.)	1.865	1.861
Average Diameter (in.)	1.893	1.897
Total Volume, V_t (ft^3)	3.04E-03	3.04E-03
Volume of Water, V_w (ft^3)	6.92E-04	9.60E-04
Volume of Solids, V_s (ft^3)	2.08E-03	2.08E-03
Volume of Air, V_a (ft^3)	2.62E-04	2.95E-07
Volume of Voids, V_v (ft^3)	9.54E-04	9.60E-04
Degree of Saturation, S (%)	72.5	100.0
Dry Density (lb/ft^3)	115.6	115.3
Void Ratio, e	0.46	0.46
Porosity, N	31.4	31.5
"B" Parameter	0.95	
Back Pressure (psi)	30	
Effective Pressure (psi)	2	
Permeability (cm/sec)	1.01E-05	

Notes:

1) A 0.005N solution of CaSO4 was used as permeant

2) Porosity was based on an assumed specific gravity of 2.70

BSK

ASSOCIATES

CONSTANT VOLUME FLEXIBLE-WALL PERMEABILITY TEST (ASTM D-5084)		
PROJECT NAME :	Tulare Irrigation District - Plum Property	
BSK JOB NO. :	E0707701F	
Report Date:	11/14/2007	
Sample Date:	10/22/2007	
Sample I.D.:	B-6 @ 15'	
Soil Description:	Sandy Silt/ Sandy Clay, fine to medium, brown	
STAGE	INITIAL	FINAL
Wet Weight (gm)	191.4	194.9
Dry Weight (gm)	165.5	165.5
Moisture Content (%)	15.6	17.8
Average Length (in.)	1.952	1.953
Average Diameter (in.)	1.902	1.900
Total Volume, V_t (ft^3)	3.21E-03	3.20E-03
Volume of Water, V_w (ft^3)	9.14E-04	1.04E-03
Volume of Solids, V_s (ft^3)	2.16E-03	2.16E-03
Volume of Air, V_a (ft^3)	1.33E-04	3.53E-06
Volume of Voids, V_v (ft^3)	1.05E-03	1.04E-03
Degree of Saturation, S (%)	87.3	99.7
Dry Density (lb/ft^3)	113.5	113.7
Void Ratio, e	0.48	0.48
Porosity, N	32.6	32.5
"B" Parameter	0.95	
Back Pressure (psi)	30	
Effective Pressure (psi)	2	
Permeability (cm/sec)	3.99E-05	

Notes:

1) A 0.005N solution of CaSO4 was used as permeant
2) Porosity was based on an assumed specific gravity of 2.70

ATTACHMENT 3 – WORK PLAN

APPENDIX B

Tulare ID Mitigated Negative Declaration for Plum Basin Project, January 2009

TULARE IRRIGATION DISTRICT
1350 W. SAN JOAQUIN AVE.
TULARE, CA 93274

Tulare Irrigation District
Plum Basin Project

Mitigated Negative Declaration

January 2009

Prepared by:

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An Employee Owned Company

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Chapter 1

INTRODUCTION

1 INTRODUCTION

The Tulare Irrigation District (District) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to address the environmental effects of the proposed Plum Basin Project (proposed Project). This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §1500 *et.seq.* The Tulare Irrigation District is the CEQA lead agency for this project.

The proposed Project involves the construction of a recharge basin in the County of Tulare. The proposed Project is described in detail in Chapter 2, Project Description. The proposed Project would provide mutual benefit to the District and the City of Tulare as both draw from the same aquifer.

DOCUMENT FORMAT

This IS/MND contains five chapters, one District-City agreement, and three technical attachments. Section 1, Introduction, provides an overview of the project and the CEQA environmental documentation process. Chapter 2, Project Description, provides a detailed description of project objectives and components. Chapter 3, Initial Study Checklist, presents the CEQA checklist and environmental analysis for all impact areas, mandatory findings of significance, and feasible mitigation measures. If the proposed project does not have the potential to significantly impact a given issue area, the relevant section provides a brief discussion of the reasons why no impacts are expected. If the project could have a potentially significant impact on a resource, the issue area discussion provides a description of potential impacts, and appropriate mitigation measures and/or permit requirements that would reduce those impacts to a less than significant level. Chapter 4, References, provides a list of reference materials used during the preparation of the IS/MND, and Chapter 5, List of Preparers, provides a list of key personnel involved in the preparation of the IS/MND.

Four attachments are provided at the end of this document, including the Groundwater Recharge Agreement between the City of Tulare and the Tulare Irrigation District, the 2006 Recharge Report, the URBEMIS output files, and the Cultural Resources letter.

Environmental impacts are separated into the following categories:

Potentially Significant Impact. This category is applicable if there is substantial evidence that an effect may be significant, and no feasible mitigation measures can be identified to reduce

impacts to a less than significant level. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Less Than Significant After Mitigation Incorporated. This category applies where the incorporation of mitigation measures would reduce an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measure(s), and briefly explain how they would reduce the effect to a less than significant level (mitigation measures from earlier analyses may be cross-referenced).

Less Than Significant Impact. This category is identified when the project would result in impacts below the threshold of significance, and no mitigation measures are required.

No Impact. This category applies when a project would not create an impact in the specific environmental issue area. "No Impact" answers do not require a detailed explanation if they are adequately supported by the information sources cited by the lead agency, which show that the impact does not apply to the specific project (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis.

Chapter 2

PROJECT DESCRIPTION

2 PROJECT DESCRIPTION

PROJECT LOCATION

The Tulare Irrigation District (TID or District) is located in Tulare County, northwest of the City of Tulare, approximately 220 miles south of Sacramento and 70 miles north of Bakersfield. The project site is within the District boundaries; north of Cartmill Avenue (Ave 248), south of Oakdale Avenue (Ave 256), west of Road 132, and east of Oakmore Road (Rd. 124) (see Figure 1). The project is within Section 29, Township 19 South, Range 25 East, M.D. B&M., and is within the Visalia and Tulare USGS 7.5 minute quadrangles.
Latitude: 36° 15' 23.1618"
Longitude: -119° 17' 1.0998"
APN: 150-010-026, 027, 028 and 150-110-013

PROJECT BACKGROUND AND OBJECTIVES

The District is a political subdivision of the State of California – an independent agency operating under the California Water Code. TID delivers surface water from two sources: Kaweah River water rights and the Central Valley Project. TID delivers surface water to approximately 230 farms in Tulare County[1]. Farmers within the District pump groundwater from private wells when surface water is not available to meet irrigation needs.

The project is a joint effort between the District and the City of Tulare (City) to reduce groundwater overdraft through the construction and operation of a new recharge basin. The City boundary is approximately five miles west of the project site. According to the California Department of Finance (2008) the City has a population of 57,375. The City is not part of TID; however, the City is within TID boundaries and works cooperatively with TID.

The proposed improvements would better serve TID and City by increasing groundwater recharge potential within TID via this new recharge facility. By written agreement, TID and the City have formed a joint operations committee which, among other things, evaluates projects of mutual benefit to and including the development of additional groundwater recharge facilities. Under separate agreement, the City financially contributes towards TID's acquisition of surplus water supplies for groundwater recharge purposes to both help reduce regional overdraft and to provide benefits to the City's well field and attendant extraction capabilities (referenced agreements are included herein as Attachments A and B, respectively). In wet years, the combined access to expanded recharge facilities and utilization of increased funding for water purchases will increase groundwater reliability to the City.

[1] Information from TID website, www.tulareid.org.

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FIGURE 1

PROJECT LOCATION

ENVIRONMENTAL SETTING

The project site is approximately 55 miles east of the Coast Range and approximately 12 miles west of the Sierra Nevada Mountain Range. The lands surrounding the project site are predominantly agricultural with the majority being prime agricultural lands under Williamson Act Contracts. Agriculture in the area include row crops, vineyards, and stone fruit orchards, most of which rely heavily on a combination of groundwater and surface water resources to support irrigation demands.

The project site is surrounded by the following uses: to the immediate north is the Creamline Basin (a TID recharge basin) and to the immediate south, east and west are operational row crop and stone fruit tree agricultural lands.

North:
Zoning: AE 40 (Agricultural 40 acre minimum)
Land Use: Recharge basin, scattered residences, operational farmlands.

East:
Zoning: AE 40 (Agricultural 40 acre minimum)
Land Use: Scattered residences, operational farmlands.

West:
Zoning: AE 40 (Agricultural 40 acre minimum)
Land Use: Scattered residences, operational farmlands.

South:
Zoning: AE 40 (Agricultural 40 acre minimum)
Land Use: Scattered residences, operational farmlands.

PROJECT DESCRIPTION

The project site is zoned AE-40 (Agriculture – 40 acre minimum) and is under Williamson Act Contract number 7288, Agricultural Preserve #2576, designated Williamson Act Prime. According to the California Government Code §51238 the construction of water facilities are determined to be compatible uses within any agricultural preserve. The majority of the 154 acre site is currently operational stone fruit orchards with approximately 40 fallow acres.

The project includes the construction of a 154 acre recharge basin consisting of three cells (see Figure 2). The basin would be excavated six feet in depth. Excavated materials would be used to create a six foot berm around the basin with excess excavated materials being stockpiled on-site. The cells would receive water via the District's Main Canal which transverses the site in a

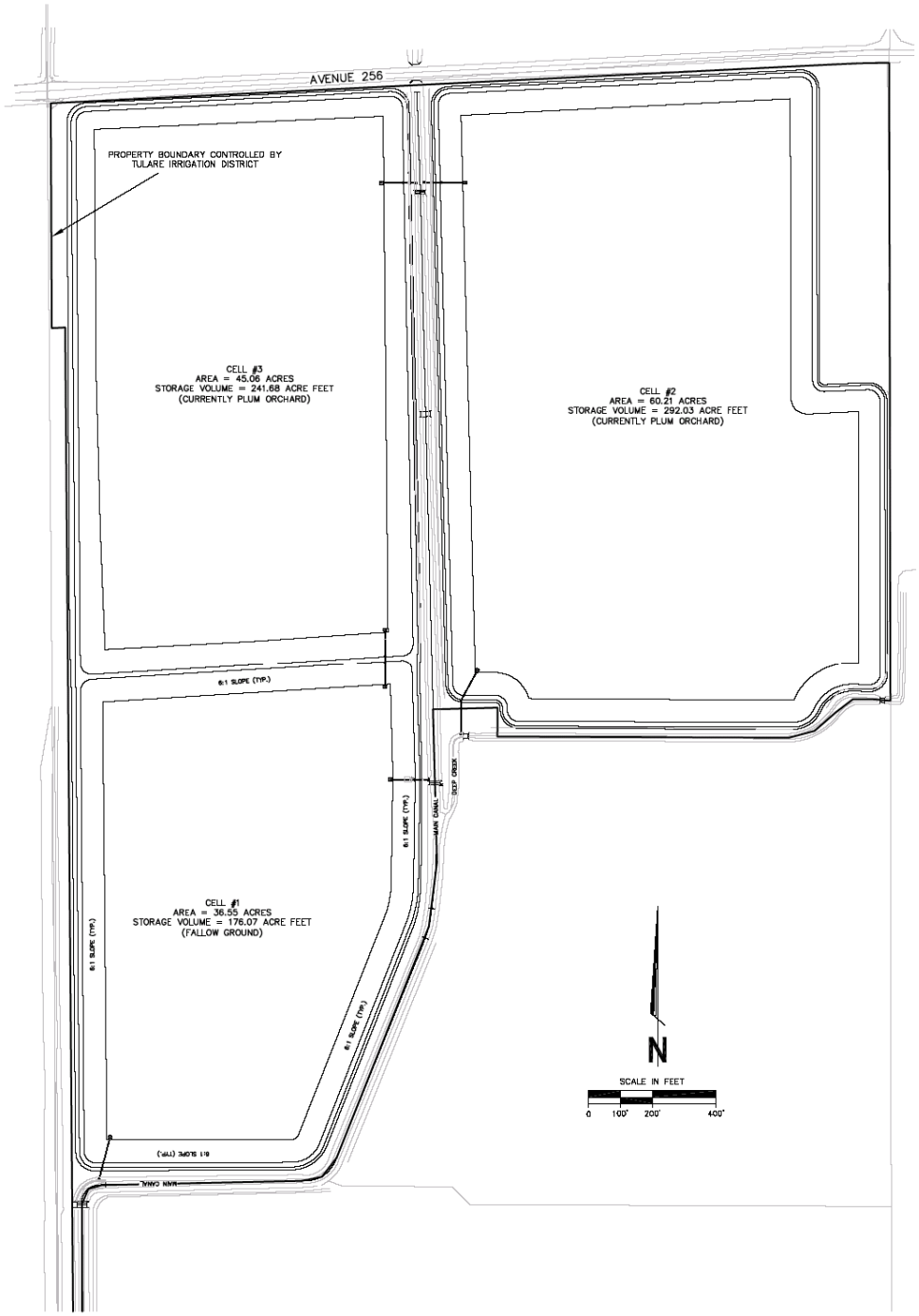

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FIGURE 2

SITE PLAN

north-south direction. Each cell would have a turnout from the Main Canal to deliver water from the Main Canal to the basin. It is anticipated that the basin would be filled when surface waters are available, therefore, when surface water is not available, the basin would be dry. Water depth is anticipated to range from 0-6 ft, although typical depth is expected to range from 3-5 ft. Groundwater monitoring around the facility would occur semi-annually.

Chapter 3

INITIAL STUDY CHECKLIST

3 INITIAL STUDY CHECKLIST

1. Project title:	Plum Basin Project
2. Lead agency:	Tulare Irrigation District 1350 West San Joaquin Avenue Tulare, CA 93274
3. Contact person:	Aaron Fukuda, District Engineer (559) 686-3425
4. Project location:	The Project is located in central Tulare County; north of Cartmill Avenue (Ave 248), south of Oakdale Avenue (Ave 256), west of Road 132, and east of Oakmore Road (Rd. 124); within Section 29, Township 19 South, Range 25 East, M.D. B&M.
5. Latitude, Longitude:	36° 15' 23.1618", -119° 17' 1.0998"
6. General plan designation:	Exclusive Agricultural District – 40 acres (AE-40)
7. Zoning:	Exclusive Agricultural Zone – 40 acres (AE-40)
8. Description of project:	See Chapter 2, Project Description
9. Surrounding land uses and setting:	See Chapter 2, Project Description
10. Other public agencies whose approval is required	None

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, as indicated by the checklist and subsequent discussion on the following pages.

☒ Aesthetics	☒ Agriculture Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☐ Hazards & Hazardous Materials	☒ Hydrology/Water Quality	☐ Land Use/Planning
☐ Mineral Resources	☒ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☒ Transportation/Traffic
☐ Utilities / Service Systems	☒ Mandatory Findings of Significance	

DETERMINATION: (To be completed by the Lead Agency)
On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

_____ _____

Signature Date

_____ _____

Printed name For

Issues:

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
I. AESTHETICS **Would the project:**				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Responses:

a) Less Than Significant Impact. The project area is located on the San Joaquin Valley floor south of the City of Visalia, east of the City of Tulare, in central Tulare County. The entire project area is developed to production agriculture, which dominates the aesthetics of the surrounding area. While the project would modify the existing character of the subject site, it would not degrade the visual quality of the site. Temporary construction activities would be visible from roadside; however, would not affect a scenic vista. The impact would be less than significant.

b) No Impact. The scenic highway program protects and enhances California's natural scenic beauty by allowing county and city governments to apply to the California Department of Transportation (Caltrans) to establish a scenic corridor protection program. Three state routes are located near the project site; State Route 99 (SR 99) is approximately 4.5 miles east of the project site, State Route 137 (SR 137) is approximately 2.4 miles south of the project site and State Route 63 (SR 63) is approximately 1.5 miles west of the project site. According to Caltrans, SR 99, SR 137 and SR 63 are not designated eligible State Scenic Highways in this area. There would be no impact.

c) No Impact. The project is immediately surrounded by agricultural land used for stone fruit orchards and the existing Creamline Basin to the north. None of this area is considered a scenic resource. The project will not degrade the existing visual character or quality of the area or its surroundings. The creation of recharge basins blend into the existing character and are commonplace in the regional setting. There is no impact.

d) Less Than Significant Impact. Additional water surface, created by the groundwater recharge basins, may create a minor source of light or glare, which will not be visible from highways, county roads or residences because the surrounding levees would block the glare path. The impact would be less than significant.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
II. AGRICULTURE RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. **Would the project:**				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☒	☐

Responses:

a) Less Than Significant Impact. According to the soil survey of the Tulare County, Western Part the project site contains two soil types:

(124) Hanford sandy loam, 0 to 2 percent slopes. The soil is characterized by moderately rapid permeability, low shrink-swell potential, and a land capability rating of 1 if irrigated and 3c nonirrigated. The soil is considered prime agricultural land in the areas that are irrigated and protected from flooding. Approximately two-thirds of the southern portion of the project site contains this soil type.

(130) Nord fine sandy loam, 0 to 2 percent slopes. The soil is characterized by a moderate permeability class, low shrink-swell potential, and a land capability rating of 1 if irrigated and 4c nonirrigated. The soil is considered prime agricultural land in areas that are irrigated and protected from flooding. Approximately one-third of the northern portion of the project site contains this soil type.

The District's intent of the recharge basin would help to ensure the viability of farming practices. The recharge basin will also replenish groundwater consumed by the City of Tulare and other local urban demands. Urban demands on groundwater impact the availability of groundwater to meet agricultural needs. Therefore, this project is intended to stabilize groundwater depletion for the Tulare area.

Prime agricultural farmland would not be converted to a non-agricultural use. The construction of the proposed groundwater recharge basin would enhance the services provided to lands both under and not under Williamson Act contracts. The supply of water to these lands would allow for additional farming that would otherwise not occur due to a lack of water during times of drought. These actions would help to ensure the continued operation and ultimate survival of agricultural entities in the Tulare County. Logically it would follow that more land would remain under, and/or new lands would apply for, Williamson Act contracts if water sources are available to ensure continued agricultural operations. The impact would be less than significant.

b) Less Than Significant Impact. The project site area is zoned Exclusive Agriculture – 40 acres. The AE-40 zone is an exclusive zone for intensive and extensive agricultural uses and for those uses which are a necessary and integral part of intensive and extensive agricultural operations. The project site is under Williamson Act contract #7288, Agricultural Preserve #4448, designated Williamson Act Prime Agricultural Land. The parcels are surrounded on three sides by agricultural land under Williamson Act contracts, mostly prime agricultural lands.

According to the California Government Code §51238 (a)(1) the construction of water facilities are determined to be compatible uses within any agricultural preserve. The project would include the construction of facilities which would allow the District to recharge surplus water in wet years that would be made available for farmers in dry years. The impact is less than significant.

c) Less Than Significant Impact. Any impacts regarding the potential conversion of farmland due to the project's location have been discussed in the analysis of Impacts II-a and II-b. The impact is less than significant.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
III. AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
f) Substantially alter air movement, moisture, or temperature, or cause any substantial change in climate?	☐	☐	☒	☐

Response:

a) Less than Significant Impact. The project lies within the San Joaquin Valley Air Basin, which is managed by the San Joaquin Valley Air Pollution Control District (SJVAPCD). National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) have been established for the following criteria pollutants: carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), nitrogen dioxide (NO_2),

particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb). The CAAQS also set standards for sulfates, hydrogen sulfide, and visibility.

Areas are classified under the Federal Clean Air Act as either "attainment" or "non-attainment" areas for each criteria pollutant based on whether the NAAQS have been achieved or not. Attainment relative to the State standards is determined by the California Air Resources Board (CARB). The San Joaquin Valley (SJV) is designated as a State and Federal non-attainment area for O_3, and $PM_{2.5}$, and a State and Federal attainment area for CO, SO_2, NO_2, and Pb (SJVAPCD, 2008). The SJV is designated a Non-attainment area by State standards and an attainment area by Federal standards for PM^{10}.

The project would not conflict with or obstruct the implementation of the air quality management plan. Operation of the project would not change following implementation of the project and no land uses are proposed that are different than those anticipated for the property in long range planning. Standards set by the SJVAPCD, CARB, and Federal agencies relating to the project would be required and incorporated at applicable design and approval stages. Specific air quality impacts related to criteria pollutants are discussed below. Impacts relating to obstructing implementation of air quality plans would be less than significant for the project.

b) Less Than Significant Impact. The San Joaquin Valley is designated as a Federal and State non-attainment area for O_3 and PM_{10}, and $PM_{2.5}$. The SJVAPCD, the regional agency that regulates air permitting and maintains an extensive air quality monitoring network to measure criteria pollution concentrations throughout the San Joaquin Valley air basin.

The project includes the construction of a 154-acre recharge basin with three cells and appurtanences. Project operations would not contribute to criteria pollutant emissions, as groundwater recharge is a passive process; however, emissions would be associated with construction. The operational phases of the project would generate at most ten trips monthly.

The URBEMIS model, Version 9.2.4 2007 was used to estimate construction emissions for the project. The modeling results are provided below in Table 1 and the output files can be seen in Attachment C.

Table 1
Proposed Project Operation and Construction Emissions

	ROG (tons/year)	**NO_x (tons/year)**	**PM_{10} (tons/year)**
Total Project Construction Emissions	0.09	0.70	0.81
Threshold of Significance	**10**	**10**	**--**

Source: URBEMIS Model, Version 9.2.4 2007
* Complying with SJAPCD's Regulation VIII reduces any Project impact to less than significant.

Regulation VIII measures are SJVAPCD mandated requirements for any type of ground moving activity and would be adhered to during the construction of the project. These requirements are listed in Table 2. Implementation of Regulation VIII measures would reduce any construction related PM_{10} emission impacts to less than significant. As demonstrated in Table 1, project construction and operation emissions would not create a significant impact.

Table 2
San Joaquin Valley Air Pollution Control District
Regulation VIII Control Measures for Construction Emissions of PM_{10}

Regulation VIII Control Measures. The following are required to be implemented at all construction sites.
All disturbed areas, including storage piles, which are not actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizers/suppressants, covered with a tarp or other similar cover, or vegetative ground cover.
All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions during construction using water or chemical stabilizer suppressant.
All land clearing, grubbing, scraping, excavation, land leveling, grading cut and fill, and demolition activities during construction shall be effectively controlled of fugitive dust emissions utilizing application of water or pre-soaking.
When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from top of container shall be maintained.
All operations shall limit, or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices is expressly forbidden.
Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site at the end of each workday.
Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.

c) Less Than Significant Impact. As discussed above, the project would result in increases in criteria pollutants during construction; however, during construction, air quality impacts would be less than SJVAPCD thresholds for non-attainment pollutants and operation of the project would not result in impacts to air quality standards for criteria pollutants. Accordingly, net increases of non-attainment criteria pollutants would not be significant for the project.

d) Less Than Significant Impact. Section 3 of the Guide for Assessing and Mitigating Air Quality Impacts defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons are present and where there is a reasonable expectation of human exposure to pollutants. Sensitive receptors normally refer to people with heightened sensitivity to localized, rather than regional pollutants. There are approximately 15 single family residences within one mile of the project site; however, concentrations of pollutants would not pose a hazardous threat to any sensitive receptors as emissions resulting from the project would be below significance thresholds, as demonstrated in the analysis of Impact III-a. The impact is less than significant.

e) No Impact. The project would not be a source of odors, therefore, there would be no impact.

f) Less Than Significant Impact. While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with GHG emissions and climate change at the state level. AB 1493 requires the Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions; these regulations will apply to automobiles and light trucks beginning with the 2009 model year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the year 2020, and 3) 80% below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that ARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change.

Temporary project construction emissions will be minimal, as demonstrated above and the operation of the project would generate new emissions below the thresholds of significance established by the SJVAPCD. In addition, Regulation VIII measures, as seen in Table 2, would be implemented, further decreasing potential emissions. The project would not significantly contribute to the emission of GHGs. The impact would be less than significant.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES **Would the project:**				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Response:

a) Less Than Significant Impact with Mitigation Incorporation. The project site is located within the United States Geological Survey (USGS) Visalia and Tulare 7.5-minute topographic quadrangles. Based on a review

of information from the California Department of Fish and Game Natural Diversity Database (CNDDB) RareFind2 data (2008, September) for these quadrangles, and the quadrangles immediately surrounding the project site (Cairns Corner, Exeter, Goshen, Ivanhoe, Monson, Paige, and Traver) there are four species of plants with federal and state-listed status, and/or California Native Plant Society (CNPS) Listed status, eight species of wildlife that are federally or state-listed or have other special status, and four sensitive terrestrial natural communities or habitat types that are reported from historical information for the nine quadrangles as shown below in Table 3.

Table 3
Federal and State-Listed Status

Scientific Name	Common Name	Special Status	CNPS	Habitat
	Plant Species			
Atriplex cordulata	Heartscale		List 1B.2	Absent
Atriplex erecticaulis	Earlimart orache		List 1B.2	Absent
Atriplex minuscule	Lesser saltscale		List 1B.1	Absent
Atriplex persistens	Vernal pool smallscale		List 1B.2	Absent
Atriplex subtilis	Subtle orache		List 1B.2	Absent
Caulanthus californicus	California jewel-flower		List 1B.1	Absent
Chamaesyce hooveri	Hoover's spurge		List 1B.2	Absent
Delphinium recurvatum	Recurved larkspur		List 1B.2	Absent
Eryngium spinosepalum	Spiny-sepaled button-celery		List 1B.2	Absent
Imperata brevifolia	California satintail		List 2.1	Absent
Orcuttia inaequalis	San Joaquin Valley orcutt grass		List 1B.1	Absent
Pseudobahia peirsonii	San Joaquin adobe sunburst		List 1B.1	Absent
	Wildlife Species			
Actinemys marmorata	Western pond turtle			Absent
Ambystoma californiense	California tiger salamander	FT		Absent
Andrena macswaini	Andrenid bee			Absent
Antrozous pallidus	Pallid bat			Absent
Athene cunicularia	Burrowing owl			Absent
Branchinecta lynchi	Vernal pool fairy shrimp	FT		Absent
Buteo swainsoni	Swainson's hawk	ST		Potential
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT		Absent
Dipodomys nitratoides	Tipton kangaroo rat			Absent
Eumpos perotis californicus	Western mastiff bat			Absent
Gambelia sila	Blunt-nosed leopard lizard	FE; SE		Absent
Lepidurus packardi	Vernal pool tadpole shrimp	FE		Absent
Lytta hoppingi	Hopping's blister beetle			Absent
Spea hammondii	Western spadefoot			Absent
Talanites moodyae	Moody's gnaphosid spider			Absent
Taxidea taxus	American badger			Absent
Vulpes macrotis mutica	San Joaquin kit fox	FE; ST		Potential
	Sensitive Vegetation Communities			
Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest		--	Absent
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool			Absent

Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Absent
Valley Sacaton Grassland	Valley Sacaton Grassland	

Sources: USFWS (1992, 1995, 1996, 1997, and 1998) CNDDB (2008), and CNPS (2008)

FE:	Federally listed as Endangered
FT:	Federally listed as Threatened
FC:	Federal Candidate species (former Category 1 candidate species) where enough data are on file to support listing
FS:	USDA Forest Service "Sensitive Species" recovery program (in cooperation with CDFG and USFWS) identifies and manages species whose populations are declining
SE:	State listed as Endangered
ST:	State listed as Threatened
SS:	State listed as Sensitive
CSC:	California Special Concern species by CDFG
List 1B:	Plants considered by the CNPS to be rare, threatened, or endangered in California and elsewhere
List 2:	Plants considered by the CNPS to be rare, threatened, or endangered in California but more common elsewhere

The impact is potentially significant; however, implementation of the following mitigation measure will reduce any impacts to less than significant.

Mitigation Measures

I) San Joaquin Kit Fox (*Vulpes macrotis mutica*)

Because there is a potential for kit fox to occur on the project site, TID shall follow the Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 1999). The measures that are listed below have been excerpted from these guidelines.

1. A pre-construction survey shall be conducted by a qualified biologist no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities on the project site, or prior to any project activity likely to impact the San Joaquin kit fox. The surveyor shall thoroughly check the project site for kit fox dens and, if found, exclusion zones shall be placed in accordance with USFWS Recommendations at the following radii:

1. Potential den	2. 50 feet
3. Known den	4. 100 feet
5. Natal/pupping den (occupied and unoccupied)	6. Contact Service
7. Atypical den	8. 50 feet

2. If dens must be removed, they must be appropriately monitored and excavated by a qualified wildlife biologist. Replacement dens will be required. Destruction of natal dens and other "known" kit fox dens must not occur until authorized by USFWS.
3. Project-related vehicles shall observe a 20-mph speed limit in all project areas during construction, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, nighttime construction should be avoided. Off-road traffic outside of designated project areas should be prohibited during construction.
4. To prevent inadvertent entrapment of kit foxes or other animals during project construction, all excavated, steep-walled holes or trenches more than two feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape

ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures under numbers 8 and 9 of this section must be followed.

5. Kit foxes are attracted to den-like structures such as pipes and therefore may enter stored pipe, becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the USFWS has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved once to remove it from the path of construction activity, until the fox has escaped.
6. All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in closed containers and removed at least once a week from a construction or project site.
7. No firearms shall be allowed on the project site.
8. To prevent harassment, mortality of kit foxes or destruction of dens by dogs or cats, no pets shall be permitted on project sites during construction.
9. A representative shall be appointed by TID who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped individual. The representative's name and telephone number shall be provided to the USFWS.
10. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the USFWS shall be contacted for advice.
11. Any contractor, employee(s), or military or agency personnel who inadvertently kills or injures a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916) 445-0045. The CDFG contact will contact the local warden or biologist.
12. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The USFWS contact is the Chief of the Division of Endangered Species, 2800 Cottage Way, Suite W2605, Sacramento, CA 95825-1846, (916) 414-6620. The CDFG contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, CA 95814, (916) 654-4262.

II) Swainson's Hawk and other birds protected under the Migratory Bird Treaty Act.

A pre-construction nest survey for avian predators and other resident and migratory birds shall be conducted prior to project construction if any heavy equipment operations are to occur during the nesting season (February 15 through September 15). All trees, vegetation, and small mammal burrows on the site shall be inspected for nests. If any occupied nests are observed, heavy equipment operations shall be minimized or avoided until the young have fledged and nesting has ceased. If this is not feasible, the USFWS and CDFG, would need to be contacted for guidance on how to proceed. The USFWS would prescribe specific mitigation dependent upon the particular species involved and the manner in which heavy equipment operations are to be conducted.

b) No Impact. No wetlands or riparian communities exist on or near the project site. There would be no impact.

c) No Impact. There are no wetlands in the immediate project vicinity. There is no impact.

d) Less Than Significant Impact. Any impacts to migratory species have been discussed in the analysis of Impact IV-a. The impact is less than significant.

e) Less Than Significant Impact. There is no adopted biological preservation or tree preservation ordinance in Tulare County. There would be no impact.

f) No Impact. There is no adopted habitat conservation plan in the project area**.** There would be no impact.

V. CULTURAL RESOURCES **Would the project:**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☒	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

Response:

a) Less Than Significant With Mitigation Incorporation. The project proposes a water recharge basin to be constructed to recharge the underlying basin that serves TID. Construction of the basin would consist of excavating six feet and using the excavated materials to raise a six-foot berm around the excavation area.

A cultural resources records search (RS# 08-320; CAR Project No. 09-22) was conducted for the project site by the Center for Archaeological Research (Attachment D). According to the search there are no known historical structures or monuments recorded on the site. Although no archaeological or historical sites appear to be within the project area, it has not been surveyed and as such, the possibility remains that resources do exist on the site. There would be a potentially significant impact if historical resources were uncovered; however, implementation of the following mitigation measure would reduce potential impacts to historical or archaeological resources to less than significant.

Mitigation Measure

If, in the course of project construction or operation, any archaeological or historical resources are uncovered, discovered, or otherwise detected or observed, activities within fifty (50) feet of the find shall be ceased. A qualified archaeologist shall be contacted and advise TID of the site's significance. If the findings are deemed significant by the District's Staff, appropriate mitigation measures shall be required prior to any resumption of work in the affected area of the project.

b) Less Than Significant Impact. Any impacts to archaeological resources have been discussed in Impact V-a. Impacts are less than significant with the implementation of the mitigation measure stated in Impact V-a.

c) Less Than Significant Impact. No known paleontological resources exist within the project area. There are no geologic features in the project area. Grading activities would be consistent with that of a water recharge basin. The majority of project construction would occur on flat areas; however, the construction of the water recharge basin would include six feet of excavation over approximately 154 acres. Project construction would not be expected to disturb any paleontological resources not previously disturbed; however, the possibility that such resources would occur on the project site does exist. Any impacts to paleontological resources would be reduced to less than significant with the implementation of the mitigation measure identified in the analysis of Impact V-a.

d) No Impact. No formal cemeteries or other places of human internment are known to exist at the site. In the event human remains are encountered during construction activities, all work within the vicinity of the remains would halt in accordance with Health and Safety Code §7050.5, Public Resources Code §5097.98, and Section 15064.5 of the CEQA Guidelines, and the Tulare County coroners office would be contacted. As such, potential impacts to human remains and paleontological resources would not occur as a result of the project. There would be no impact.

VI. GEOLOGY AND SOILS **Would the project:**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Response:

a-i) Less Than Significant Impact. No substantial faults are known to occupy Tulare County according to the Alquist-Priolo Earthquake Fault Zoning Maps and the State of California Department of Conservation. The potential for the rupture of a known earthquake fault are less than significant.

a-ii) Less Than Significant Impact. Any impacts regarding strong seismic ground shaking have been discussed in Impact IV-a-i. The impact would be less than significant.

a-iii) Less Than Significant Impact. No subsidence-prone soils, oil or gas production exists at the project site. Overdraft exists throughout the Western portion of Tulare County; however, the project is a recharge basin and will decrease the amount of overdraft experienced in the surrounding areas. Furthermore, soil conditions on the site are not prone to soil instability due to their low shrink-swell behavior. The impact would be less than significant.

a-iv) No Impact. No geologic landforms exist on or near the site that would result in a landslide event. There would be no impact.

b) Less Than Significant Impact. Grading activities associated with the construction of the recharge basins would involve earthmoving, excavation, stockpiling, and grading. These activities could expose soils to erosion processes. The extent of erosion would vary depending on slope steepness/stability, vegetation/cover, concentration of runoff, and weather conditions.

The project site is relatively flat which would reduce the potential for erosion and loss of topsoil to a certain degree. To further prevent water and wind erosion during the construction period, a Storm Water Pollution Prevention Plan (SWPPP) would be developed for the project as required for all projects which disturb more than one acre. As part of the SWPPP, the applicant would be required to provide erosion control measures to protect the topsoil. Topsoil materials would be stripped from the ground surface and used in part for construction of the earthen berms of the recharge basins. This would ensure that organic matter, the existing seed bank, and topsoil texture are maintained for any future agricultural activities and soil-stabilizing revegetation efforts at the project site. Any stockpiles soils would also be watered and/or covered to prevent loss due to wind erosion as part of the SWPPP during construction. As a result of these efforts, loss of topsoil and substantial soil erosion during the construction period are not anticipated.

During recharge operations, the recharge basins would contain water, which would inhibit erosion; during periods of non-recharge, the recharge basins would be subject to wind erosion, however, plant cover at the project site would minimize wind erosion. The impact is less than significant.

c) Less Than Significant Impact. Substantial grade change would not occur in the topography to the point where the project would expose people or structures to potential substantial adverse effects on, or offsite, such as landslides, lateral spreading, subsidence, liquefaction or collapse. The impact would be less than significant.

d) Less Than Significant Impact. No subsidence-prone soils, oil or gas production exists at the project site. Furthermore, soil conditions on the site are not prone to soil instability due to their low to moderate shrink-swell behavior. Although the underlying water basin is in a state of overdraft, which is often a catalyst to subsidence, the construction of a new recharge basin with recharge capacity of 49 acre feet per day would result in a net increase of groundwater at the project site, which would lessen the overdraft. The impact would be less than significant.

e) No Impact. The project does not require septic tanks. There is no impact.

VII. HAZARDS AND HAZARDOUS MATERIALS **Would the project:**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Response:

a) No Impact. There would be no transport, use or disposal of hazardous materials. There is no impact.

b) No Impact. The project would not create a significant hazard to the public or the environment as the project would not discharge hazardous materials into the environment. There is no impact.

c) No Impact. Two schools are located within 2 miles of the project site. Liberty Elementary School is approximately 1.6 miles northwest of the project site and Sundale Elementary School is located approximately 2.0 miles south of the project site. The project involves construction of a water recharge basin and would not emit hazardous emissions, involve hazardous materials, or create a hazard to the schools in any way. There is no impact.

d) No Impact. The project site is not listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control. There is no impact.

e) No Impact. The project is not located within an airport land use plan. There are three airports located within a 10-mile radius of the project site: Mefford Field – 6.6 miles to the southwest; Visalia Municipal Airport – 7.3 miles to the northwest; and Thunderhawk Field – 7.2 miles east of the project site. Therefore, the project would not result in a safety hazard for people within the project area. There is no impact.

f) No Impact. Any impacts regarding private airstrips have been discussed in Impact VII-e. There is no impact.

g) No Impact. The project does not cross any publicly accessed routes, and would not interfere with implementation of an emergency response plan or evacuation. There is no impact.

h) No Impact. The project site and the surrounding lands are in intensive agricultural production and are not considered wildlands. The area is routinely maintained for weed control. There is no impact.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY **Would the project:**				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Response:

a) Less Than Significant Impact. According to the Tulare County General Plan (2007) the assurance of water quality requires the review of major land uses and development plans to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from strorage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site. The project would not result in any of the above mentioned water quality deteriorating events. The impact is less than significant.

b) Less Than Significant Impact. The project site is located in the Tulare Lake Basin and is in an area significantly affected by overdraft. The Department of Water Resources (DWR) has estimated the groundwater by hydrologic region and for the Tulare Lake Basin, the total overdraft is estimated at 820,000 acre-feet per year, the greatest overdraft projected in the state, and 56 percent of the statewide total overdraft. Within the Kaweah Subbasin portion of the regional area it is estimated to be about 20,000 to 30,000 acre-feet per year. The District imports a significant amount of water from the Friant Unit of the Central Valley Project (CVP) to help offset this ongoing overdraft.

The project includes the construction of a 154-acre recharge basin which would recharge an average of 49 acre feet per day. No extraction wells would be constructed as a part of the project thus the project would result in a net increase in groundwater supplies. There would be a less than significant impact.

c) Less Than Significant Impact. Drainage patterns would change as a result of project buildout. Construction of the proposed groundwater recharge basin would consist of excavating six feet in depth and using the excavated materials to raise a six foot berm around each of the three basins. Each of the three cells would have a turnout constructed from the Main Canal. Implementation of erosion control measures described by the Tulare County Development Standards and mandated in the Stormwater Pollution Prevention Program would minimize any potential impacts to less than significant.

d) Less Than Significant Impact. Any impacts regarding the alteration of drainage patterns to increase runoff water that would potentially induce flooding have been discussed in the impact analysis for Impact VIII-c.

e) Less Than Significant Impact. Any impacts regarding the creation or contribution to runoff water that would potentially exceed the capacity of existing stormwater drainage systems have been discussed in the impact analysis for Impact VIII-c.

f) Less Than Significant Impact. Any impacts to water quality have been discussed in the impact analysis for Impact VIII-a.

g) No Impact. According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) Flood Insurance Rate Map (FIRM) for Community Number 065066 0650 C dated October 6, 1998, Panel No. 650, the project site is located within Zone B, outside of the 100-year flood plain. There would be no impact with regards to flood related events.

h) No Impact. Any impacts regarding the placement of structures in a 100-year flood hazard area that would impede or redirect flood flows have been discussed in the analysis of Impact VIII-g.

i) No Impact. The dam potentially affecting the project site, Terminus Dam, is approximately 20 miles to the northeast of the project site. According to the United States Army Corps of Engineers the inundation flow from dam failure would not affect the project site. There would be no impact.

j) No Impact. Due to the lack of a significant water body near the project site, there would be no potential for seiche or tsunami to occur. There would be no impact.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
IX. LAND USE AND PLANNING **Would the project:**				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Response:

a) No Impact. The project is located in a rural agricultural setting, approximately four miles north of the City of Visalia and approximately five miles southwest of the City of Tulare in Tulare County; however, the project will not physically divide these or any other established community. There is no impact.

b) No Impact. According to the California Government Code §51238 (a)(1) the construction of water facilities are determined to be compatible uses within any agricultural preserve. The project would include the construction of facilities to be used by the Tulare Irrigation District for the purposes of increase the efficiency with which TID delivers water to agricultural operations. There is no impact.

c) No Impact. There are no adopted habitat conservation plans or natural community conservation plans in the area of the project, therefore there is no impact.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
X. MINERAL RESOURCES **Would the project:**				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Response:

a) No Impact. According to the Tulare County General Plan Policy Summary (2001) no known mineral resources have been found in the vicinity of the project site thus the project would not result in the loss of an available known mineral resource. There is no impact.

b) No Impact. The project site is not delineated on a local land use plan as a locally important mineral resource recovery site, therefore, the existence of the project would not result in the loss of availability of any mineral resources. There is no impact.

XI. NOISE **Would the project result in:**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Response:

a) Less than Significant Impact. The project would involve temporary noise sources associated with general construction activity. Typical construction equipment would include scrapers, backhoes, drilling rigs and miscellaneous equipment (i.e. pneumatic tools, generators and portable air compressors). Typical noise levels generated by this type of construction equipment at various distances from the noise source are listed in Table 4 below:

Table 4
Typical Construction Noise Levels

Construction Equipment Noise Source	dBA at 50 ft	dBA at 100 ft	dBA at 1.0 mile
Pneumatic tools	85	79	45
Truck (e.g. dump, water)	88	82	48
Concrete mixer (truck)	85	79	45
Scraper	88	82	48
Bulldozer	87	81	47
Backhoe	85	79	45
Generator	76	70	36
Portable air compressor	81	75	41

Source: Borba Farms Dairy EIR, BASELINE Consulting, 1999, Cunniff 1977

Noise levels generated by the equipment would range from 76 to 88 dBA at a distance of 50 feet from the noise source; at 100 feet, the noise levels would range from 70 to 82 dBA. Noise from construction activities would not exceed the Tulare County General Plan (2007) noise standards of 60 dBA at the exterior of nearby residences, approximately 2,640 feet away from the project site. The impact is less than significant.

b) Less than Significant Impact. The Federal Railway Administration (FRA) and the Federal Transmit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to ground-borne vibration levels of 0.5 peak particle velocity (PPV) without experiencing structural damage (FRA, 1998). The FTA has identified the human annoyance response to vibration levels as 80 root mean square amplitude (RMA) (FTA, 1995).

The project would involve temporary vibration sources associated with general construction activity. Typical vibration levels generated by generic construction equipment a distance of 50 feet from the vibration sources are listed below:

Construction Equipment Noise Source	PPV at 50 ft (inches/second)	RMS at 50 ft
Large Bulldozer	0.031	81
Caisson drilling	0.031	81
Loaded trucks	0.027	80

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, April 1995.

Vibration from construction activities would not exceed the FTA or FRA threshold for the nearest residence, approximately 2,640 feet away from the project site. The impact is less than significant.

c) Less than Significant Impact. Upon completion of construction activities, the majority of project operational activity would be passive and would include the movement of water through pipes. Potential noise sources resulting from project implementation include noise associated with vehicular trips for maintenance/repair activities. Maintenance would involve activities such as clearing debris and dredging recharge basins and vegetation management activities. Maintenance activities would occur infrequently and are not expected to substantially increase ambient noise levels in the area above existing levels without the project. The impact would be less than significant.

d) Less Than Significant Impact. Any impacts regarding the temporary increase in ambient noise levels have been discussed in the analysis of Impact XI-a. The impact is less than significant.

e) No Impact. The project is not located within an airport land use plan. There are three airports located within a 10 mile radius of the project site: Mefford Field – 6.6 miles to the southwest; Visalia Municipal Airport – 7.3 miles to the northwest; and Thunderhawk Field – 7.2 miles east of the project site. The project is not located within a noise contour of these airports; therefore, the project would not expose residents or employees to noises associated with public or private airport use. There would be no impact.

f) No Impact. Any impacts regarding the noise levels associated with private airstrips have been discussed in Impact XI-e. There would be no impact.

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
XII. POPULATION AND HOUSING **Would the project:**				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Response:

a) No Impact. According to the City of Tulare's Urban Water Management Plan (2005) the City has established policy to recharge 10 to 15,000 acre feet per year. The portion of water recharged by the City is to offset its portion of the state of overdraft within the Kaweah Subbasin and will not induce population growth. The District's intent of the recharge basin is to conserve wet year water supplies, and not contribute to population growth. There is no impact.

b) No Impact. No housing or people would be displaced by the project. There is no impact.

c) No Impact. Any impacts regarding the displacement of people have been discussed in Impact XII-b. There is no impact.

XIII. PUBLIC SERVICES

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Response:

a) No Impact. The project would not rely on the addition or alteration of any public services. The subject site is within the County of Tulare and would receive needed services from existing agencies and departments. There would be no impact.

Fire Protection – The project area is located within the Tulare County Fire Department (TCFD) and is serviced by the Visalia Fire Station #1. No residential or commercial construction is identified with this project and no change in existing land use is associated with this project, therefore, no additional services would be required from the TCFD. There is no impact.

Police Protection – The District is located in the Tulare County Sheriff's Department law enforcement services and is serviced by the Tulare County Headquarters, located in Visalia. As discussed in Impact XIII-a, no residential or commercial construction or change in existing land use is proposed in this project. The project would not impact existing law enforcement services.

Schools – The project site is within the Liberty Elementary School District and the Tulare Union High School District; however, as discussed in Impact XIII-a, the project would not include construction of any residential structures, nor change the existing land use. The project would not result in an increase of population that would require additional school facilities. There is no impact.

Parks - The project site is located within the Tulare County RMA Parks and Recreation Branch. State law requires each new residential development to dedicate land for park facilities or pay an in-lieu fee to cover the cost of acquiring park land elsewhere; however, this project involves the recharge of groundwater utilizing the existing and new infrastructure. The project will not create a need for additional park or recreational services. There is no impact.

Other public facilities – The proposed improvements would better serve the District by increasing the groundwater recharge potential within the District via a new recharge facility. There is no impact.

XIV. RECREATION

	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Response:

a) No Impact. As discussed in Impact XIII-a, the project will not increase the demand for recreational facilities nor put a strain on the existing recreational facilities. There is no impact.

b) No Impact. The project does not include the construction or expansion of recreational facilities. There is no impact.

XV. TRANSPORTATION/TRAFFIC **Would the project:**	Potentially Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	Significant No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Response:

a) Less than Significant Impact. The project will consist of the construction of a groundwater recharge basin and does not require construction of any new roadways. The project location is adjacent to current District facilities (Creamline Basin) which receives regular maintenance, therefore, no additional trips would be

needed for maintenance activities at the Plum Basin project site. Typical construction traffic would be temporary in nature. The permanent impact to local roadways would be less than significant.

b) No Impact. The project does not require construction of any roadways, and would not generate new trips for operation. As the project would not generate any new traffic, it would not contribute to congestion on the local roadways. There is no impact.

c) No Impact. As the project is not in the vicinity of an airport, the project would not cause an increase in air traffic levels or cause a change in air traffic location. There is no impact.

d) No Impact. No roadway design features are associated with this project and there is no change in the existing land use which would result in an incompatible use. There is no impact.

e) No Impact. No roads would be modified as a result of this project; therefore, there is no impact to any emergency access.

f) No Impact. The project would not generate any additional traffic that would subsequently result in an increased need for parking. There is no impact.

g) No Impact. There are no adopted alternative transportation policies, plans, or programs in the project area. There is no impact.

XVI. UTILITIES AND SERVICE SYSTEMS **Would the project:**	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Response:

a) No Impact. The project involves improving groundwater recharge capacities and recapturing efforts which will increase the District's ability to reliably deliver irrigation water to agricultural users within its boundaries during "dry" years. The project would not involve any change or increase in wastewater properties. There is no impact.

b) No Impact. As discussed in Impact XVI-a, operation of the project would not require additional water supplies nor would it generate any wastewater. There is no impact.

c) No Impact. The amount of runoff at the project site would not increase as a result of this project. Accordingly, no impact to storm water drainage capacity would occur. There is no impact.

d) No Impact. The project involves a groundwater recharge basin from water that is already allocated to the District pursuant to the terms of previous agreements. In years where additional water is available for purchase through the Central Valley Project, the District shall purchase for additional groundwater replenishment efforts of the Kaweah Subbasin. There is no impact.

e) No Impact. As discussed in Impact XVI-a, the project would not generate wastewater. There is no impact.

f) No Impact. Operation of the project would not generate any solid waste. There is no impact.

g) No Impact. Any Impacts regarding the generation of waste have been discussed in Impact XVI-f. There is no impact.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Response:

a) Less Than Significant Impact. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the project would have a less than significant effect on the local environment. The project includes the construction of a 154-acre recharge basin with three cells and appurtanences.

As described above, the potential for impacts to biological resources from the construction of TID groundwater recharge facility and continued operation would be less than significant with the incorporation of mitigation measures stated in the previous impact sections. Accordingly, the project would involve no potential for significant impacts through the degradation of the quality of the environment, the reduction in the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory. The impact is less than significant.

b) Less Than Significant Impact. As discussed above, the project would result in less than significant impacts to biological resources with mitigation incorporation. The implementation of the identified project-specific mitigation measures and compliance with applicable codes, ordinances, laws and other required regulations would reduce the magnitude of any impacts associated with construction activities to a less than significant level.

c) Less Than Significant Impact. The project would not result in substantial adverse effects on human beings, either directly or indirectly. Mitigation measures are provided to reduce the project's potential effects on biological and cultural resources below the level of significance. No additional mitigation measures would be required. Adverse effects on human beings resulting from implementation of the project would be less than significant.

Chapter 4

REFERENCES

4 REFERENCES

California Geological Survey. Special Publication 42- Fault Rupture Hazard Zones in California. Table 4. May, 1999.

California Air Pollution Control Officers Association. CEQA and Climate Change, January 2008

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Federal Emergency Management Agency. Flood Insurance Rate Map. Community Number 065066, Panel 0650C. October 6, 1998.

Guide for Assessing and Mitigating Air Quality Impacts. San Joaquin Valley Air Pollution Control District. January 2002.

Tulare Irrigation District, District Profile, www.tulareid.org

U. S. Department of Agriculture, Natural Resources Conservation Service. Soil Survey of Tulare County, California, Western Part. 2006.

U.S. Fish and Wildlife Service. Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior To or During Ground Disturbance. June, 1999

Chapter 5

LIST OF PREPARERS

5 LIST OF PREPARERS

The following firms, individuals and agency staff contributed to the preparation of this document:

Tulare Irrigation District
1350 West San Joaquin Avenue
Tulare, CA 93274

Aaron Fukuda, District Engineer

130 N. Garden Street
Visalia, CA 93291

Juile Phillips-Boyle, Project Manager
Emily Magill-Bowen, Project Planner
Jenni Byers, Project Planner

Attachment A

Groundwater Recharge Agreement

AGREEMENT REGARDING DELIVERY OF WATER TO CERTAIN GROUNDWATER RECHARGE FACILITIES

THIS AGREEMENT is made and entered into this 6th day of May, 2008, by and between TULARE IRRIGATION DISTRICT, an Irrigation District organized and existing pursuant to the laws of the State of California (hereinafter referred to as "District"), and the CITY OF TULARE, a Municipal Corporation of the State of California (hereinafter referred to as "City").

WITNESSETH

A. WHEREAS, District is a public entity engaged in the importation and delivery of water for irrigation purposes to landowners within the District; and

B. WHEREAS, City and District entered into an Agreement dated May 10, 2005 (the "Master Agreement"), which provides for the use by City of certain canal and ditch facilities owned and controlled by District for the purpose of disposing of storm drainage; payments by City in lieu of District assessments; an agreement to develop joint policies related to impacts of new urban development on District facilities; and an agreement to consider and enter into various joint projects; and

C. WHEREAS, City has determined that it is in City's interest to acquire water from District and to deliver such water to groundwater recharge basins in locations that will provide a groundwater recharge benefit to areas that serve City; and

D. WHEREAS, in addition to purchasing water, City has the need to acquire basins to which such water can be delivered; and

E. WHEREAS, City and District have entered into an agreement dated December 4, 2007, ("Joint Purchase Agreement") providing for the joint purchase of property located at the corner of Road 132 and Avenue 256, known as the "Plum Property", for the purpose developing such property to a groundwater recharge basin. The Joint Purchase Agreement establishes joint rights in the Plum Property. After execution of the Joint Purchase Agreement, the property has been acquired as envisioned; and

F. WHEREAS, the Joint Purchase Agreement obligates the parties to negotiate and enter into a subsequent agreement providing for the purchase of water by City and the delivery of such water to various City, District and joint City-District facilities; and

G. WHEREAS, the parties now desire to set forth their agreement regarding the obligation of District to deliver water to various facilities, and the obligation of the City to pay the costs of such delivered water.

NOW THEREFORE, the parties hereto covenant and agree as follows:

1. **Definitions.** The following terms, when appearing as capitalized terms elsewhere in this Agreement, shall have the following meanings:

"**Agreed Facilities**" shall mean all of those facilities described in Exhibit A attached hereto. City may identify in the future any City-owned property it believes would be beneficial to receive water pursuant to this Agreement, and with the consent of District, such facility shall be added to the Agreed Facilities list, subject the District maintaining its discretion for determining the timing and amount of water to be delivered to such City facilities.

"**Average Annual Quantity**" shall initially mean approximately 10,000 a.f., such amount to be increased proportionally if adjustments to City's jurisdictional boundaries consistent with the Master Agreement results in more land being included within City boundaries or if the City increases its groundwater extractions from City-owned wells. Said Average Annual Quantity is to be annually derived in accordance with a formula as defined in Exhibit B attached hereto.

"**Credited Water Balance**" is defined as the amount of water, in acre feet, calculated by determining the total cumulative water delivered by District during the five year period immediately preceding the date of calculation, and subtracting from that amount the sum of the Average Annual Quantity for each of the previous five years or the number of years this Agreement has been in effect, whichever is less. By way of example only and not by limitation, assuming 55,000 acre feet have been delivered to the Agreed Facilities during the past five years, and assuming that the Average Annual Quantity in effect through the past five years is 10,000 acre feet, the Credited Water Balance would be equal to: 55,000 a.f. – (10,000 a.f. * 5); or 55,000 a.f. – 50,000 a.f.; or +5,000 a.f.

2. **Obligation to Deliver Water.** District hereby agrees to deliver on an annual basis a certain average quantity of water, defined above as the Average Annual Quantity, to the facilities defined above as the Agreed Facilities. District shall be responsible for determining, with the advice and consent of City, the manner and location of the water to be delivered, and shall not be

required to deliver all or any percentage of the water to be delivered to any particular basin, including the basin to be constructed by City and District jointly on the Plum Property. District shall endeavor to ensure that the Credited Water Balance, as annually reported pursuant to the provisions of paragraph 3 below, remains greater than or equal to zero. The purpose of the Credited Water Balance calculation is ensure that a total of 10,000 acre-feet of water is delivered on a rolling five year average annual basis, recognizing that water conditions will allow for more water to be delivered in some years and less in other years. The Credited Water calculation and accounting is not intended to establish a "water bank" or in any other way establish a right to the amount of water calculated through the Credited Water accounting system.

3. **Accounting for Delivered Water.** District shall, by October 31st each year, document and provide an annual summary of the water deliveries made pursuant the Water Purchase Agreement, and shall endeavor to document estimates of groundwater recharge benefits that resulted from or are anticipated to result from such water deliveries. As part of such annual summary, District shall calculate the Credited Water Balance according to the formula defined above.

4. **Timing of Water Deliveries.** Water deliveries shall occur only during those times when water is available to District for delivery, and can be recharged into the Agreed Facilities. To the extent that District makes deliveries to any of the Agreed Facilities that are under the City's control ("City's Facilities"), District shall provide an anticipated schedule of such deliveries and flow rate with reasonable advance notice to City for approval, and District shall not cause water to flow into any such City's Facilities without City's consent.

5. **Water Charges.** City shall pay a unit water delivery charge associated with such delivered water that is equal to the water charge paid by District for its Central Valley Project Class 2 contract supply. Such payment shall be made annually and shall be based on the then-current Average Annual Quantity.

6. **Water Source & Quality.** District reserves the right to determine the source of the water from which deliveries will be made to satisfy this Agreement. District does not guarantee the quality of water delivered pursuant to this Agreement; District agrees that such water shall be of a similar quality to water District delivers to other users from the Friant-Kern Canal or the Kaweah River.

7. **District's Obligations Contingent Upon Continuation of US-District Contract, Etc.** District's obligations to deliver water to the Agreed Facilities pursuant to this Agreement are contingent upon, and subject to, the continuing existence of (i) a contract between the United States government (or agency thereof) and District for the provision of water from the Central Valley Project via the Friant-Kern Canal, or (ii) a contract or entitlement otherwise affording District sufficient water to meet its obligations pursuant to Section 5.

8. **Term.** The Water Purchase Agreement shall be in effect for as long as the City and District continue to abide by the terms of the Master Agreement.

9. **Representations and Warranties of Authority.** Each party represents to all other parties that such party has the full power and authority to enter into this Agreement, that the execution and delivery thereof will not violate any agreement to which such party is a party or by which such party is bound, and that this Agreement, as executed and delivered, constitutes a valid and binding obligation of such party, enforceable in accordance with its terms. The corporate, partnership, and association signatories to this Agreement expressly warrant that they have been authorized by their respective company, partnership, or association entities to execute this Agreement and to bind them to the terms and provisions hereof. Any public agency signatory to this Agreement represents and warrants that the Agreement is executed in compliance with a resolution of the governing entity of the public agency, duly adopted by the governing entity and transcribed in full in the minutes of the governing entity. Any individual signing this Agreement on behalf of a public agency represents that she/he has full authority to do so.

10. **Duty to Cooperate.** Each party shall cooperate so as to facilitate the other party's efforts to carry out its obligations under this Agreement.

11. **Successors and Transferees.** The obligations and benefits of this Agreement do not run with the land, and are personal to the City and the District and are not assignable or transferable.

12. **Entire Agreement.** This Agreement constitutes the entire agreement between the parties, and it is expressly understood and agreed that the Agreement has been freely and voluntarily entered into by the parties with the advice of counsel, who have explained the legal effect of this Agreement. The terms of this Agreement are contractual and not mere recitals. The parties further acknowledge that no warranties, representations or inducements not contained in this Agreement have been made on any subject in connection with this Agreement, and that

they have not been induced to execute this Agreement by reason of non-disclosure or suppression of any fact. This Agreement may not be altered, modified or otherwise changed in any respect except by writing, duly executed by the parties or their authorized representatives. This Agreement is fully integrated.

13. Construction. The parties acknowledge that each party and its counsel have reviewed and revised this Agreement and that no rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall be employed in the interpretation of this Agreement.

14. Severability. In the event any of the terms, conditions or covenants contained in this Agreement is held to be invalid, any such invalidity shall not affect any other terms, conditions or covenants contained herein which shall remain in full force and effect.

15. Governing Law. California law shall govern the interpretation and enforcement of this Agreement.

16. Remedies. Any motion or other action by the parties to enforce this Agreement shall be filed or otherwise brought and adjudicated in the Tulare County Superior Court. The Tulare County Superior Court shall maintain and reserve jurisdiction of this action for the purpose of enforcing the terms of this Agreement as a judgment or order of the Court. Nothing in this paragraph shall be interpreted in a manner to preclude whatever rights the parties may have to appeal rulings of the Tulare County Superior Court. The parties otherwise retain the full range of legal and equitable remedies to enforce the terms of this Agreement, including injunctive relief and specific performance, to ensure the parties comply with their commitments under this Agreement. In any action to enforce this Agreement, each party shall be responsible for its own attorneys' fees and costs. The parties shall meet and confer and attempt to resolve their differences informally before commencing any action to enforce this Agreement.

17. Further Assurances. In addition to the documents and instruments to be delivered as herein provided, each of the parties shall, from time to time at the request of the other parties, execute and deliver to the other parties such other instruments of transfer, conveyance and assignment and shall take such other action as may be required to more effectively carry out the terms of this Agreement.

18. Time of the Essence. Time is expressly declared to be of the essence of this Agreement and of every provision hereof in which time is an element.

19. Captions. Paragraph titles or captions contained herein are inserted as a matter of convenience and for reference, and in no way define, limit, extend or describe the scope of this Agreement or any provision thereof.

20. Notices. Where required by this Agreement, notice shall be provided by regular mail or overnight delivery, and shall be considered made when deposited in U.S. or express mail.

21. Counterparts. The parties may execute this agreement in counterparts. The counterparts, if any, constitute a single agreement.

IN WITNESS WHEREOF, the parties have executed this Agreement to be effective as of the date and year last below written.

CITY OF TULARE

"CITY"

By: _____ 5-7-08

Darrel L. Pyle — Date

City Manager

TULARE IRRIGATION DISTRICT

"DISTRICT"

By: _____ 6-10-2008

David G. Bixler — Date

President, Board of Directors

Attested

By: _____ 5/7/08

Chief Deputy City Clerk — Date

By: _____ 6/11/08

J. Paul Hendrix — Date

General Manager

Approved as to form and content.

By: _____ 5/6/08

S.L. Kabot — Date

City Attorney

Approved as to form and content.

By: _____ 6/11/08

Alex M. Peltzer — Date

District Counsel

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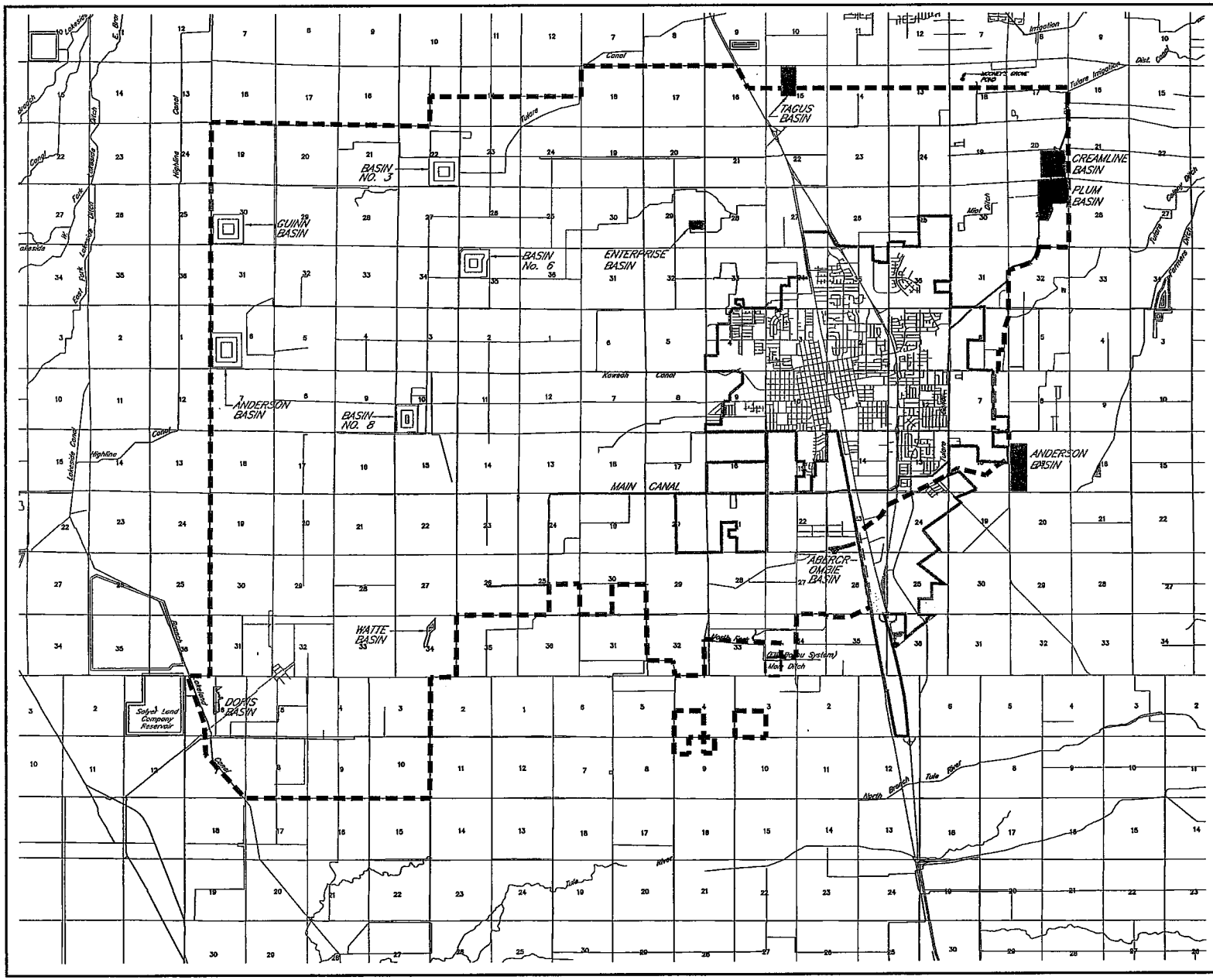
EXHIBIT A



LEGEND

- TULARE IRRIGATION DISTRICT SERVICE AREA
- CITY OF TULARE CITY LIMITS
- BASIN UTILIZED TO SINK WATER FOR CITY OF TULARE RECHARGE

NORTH

TULARE IRRIGATION DISTRICT

TID BASIN LOCATION MAP

TULARE IRRIGATION DISTRICT
FORMED IN 1888

1350 W. SAN JOAQUIN AVE.
TULARE, CA 93274
TEL: (559) 686-3425
FAX: (559) 686-3673
WEB: www.tularekl.org

Exhibit B
Calculation of Average Annual Quantity

For the purposes of the Agreement, the following parameters will apply:

Avg. surface water supply to TID water users: 60%[1]

Groundwater overdraft in Tulare region: 7,000 AF[2]

City annual groundwater pumping: City Use

District area: TID A

City area: City A

City share of total area: City A ÷ (TID A + City A)

Based on the foregoing parameters, the Average Annual Quantity shall be computed as follows:

Average Annual Quantity = 60% X City Use + (City A/(TID A+City A) X 7,000)

Example for 2007: 60% X 18,870 AF + (18.78 sq. mi./ (104.04 sq. mi. + 18.78 sq. mi.)X 7,000 AF) = 12,392 AF

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(1) Based on long-term TID surface water deliveries and crop water usage
(2) Per KDWCD "Water Resources Investigation Report" - April 2005

Attachment B

2006 Recharge Report

Tulare Irrigation District

Report on 2006 Water Management Operations
for
City of Tulare

Purpose:

The purpose of this report is to provide information regarding the District's 2006 water operations and how such operations have afforded a groundwater benefit to the City and surrounding environs. Such benefits are being sought by the City in order to improve groundwater conditions under the City area and are in furtherance of related goals and objectives of the City/District Joint Operations Committee.

Overview:

Experiencing the second wet year in a row (about 180% of average runoff in the southern Sierras), the District has diverted to-date about 293,000 AF for irrigation deliveries and groundwater recharge during the lengthy water run in calendar year 2006. This is nearly double the average-year diversion of about 150,000 AF. Of the total, about 146,000 AF was percolated to the underground, much of which by utilizing various recharge basins operated by, or accessible to, the District. To accomplish the sizable recharge and delivery operations, the District purchased 85,000 AF of additional water both under its own CVP contract and from others selling CVP or Kaweah supplies. Of the total recharge accomplished, about 32,300 AF was percolated in recharge basins providing direct and immediate benefit to the groundwater depression under the City. Also, additional CVP water was purchased over and above this year's recharge and delivery capability in order to carry over 10,000 AF for delivery in early winter 2007 to further both direct and in-lieu recharge operations.

Background:

One of the goals the Committee was charged with implementing was as referenced in Section 15 of the City-District Agreement, that being programs to further groundwater recharge in the Tulare area. Early in 2006 the Committee conferred on this topic and discussed possible programs. These included (a) long-term projects which would include ways to expand upon and build groundwater recharge facilities, and (b) short-term programs such as establishment of a City groundwater augmentation fund to provide financial assistance to the District in its purchase of imported water for groundwater replenishment. See "City Groundwater Augmentation Program," included as Attachment A, for a summary of the intended objectives and funding basis for this program as reviewed by the Committee. The Committee determined, and the City Council and District Board both concurred, that a program to secure

about 9,000 to 10,000 AF on average of imported water for recharge deliveries in a manner to demonstrate benefits to the City would be pursued.

District Purchase of Additional Water for Recharge:

The District aggressively pursued the purchase of additional water supplies this year, both to provide water for recharge operations and to extend the District's irrigation run well into September (to reduce farmer pumping from the underground). Surplus water was available this year and the District, under its CVP contract, purchased 63,000 AF of such surplus water. An additional 15,000 AF of CVP water and 5,000 AF of Kaweah water was also purchased from others for these purposes.

Program with KDWCD:

The District also purchased an additional 24,500 AF of CVP water for exchanges with, and deliveries by, KDWCD. This program enabled KDWCD to import more water into the Kaweah basin, thereby reducing the pumping demands on groundwater.

District Recharge Basin Deliveries:

Of the total 146,000 AF recharged to the underground during this year's extensive water run, about 32,300 AF was directed into recharge basins within the District providing a direct benefit to City groundwater extraction operations. See the map in Attachment B showing these basins and the estimated quantities of water delivered to each. Also depicted on the map are the groundwater elevation contours in and around the City. These contours indicate that, because of the pumping depression under much of the City, all such basins utilized in this 2006 program provide a benefit to the City. Groundwater pressure gradients direct water recharged in all such basins towards the City and its groundwater well field.

Other Recharge Basin Deliveries:

In addition to District-operated basins, several others located within the Farmers Ditch Co. system east of the City were utilized. These also are shown in Attachment B. The District arranged for the diversion of 2,600 AF directed to recharge deliveries into these basins. A series of Kaweah/CVP exchanges and acquisition of additional Kaweah water made this joint program with Farmers Ditch Co. possible.

Water Secured for Winter 2007:

By intention, the District purchased more CVP and Kaweah water than its operational capacity could fully utilize through the spring and summer irrigation run, which extended to the end of September. After cessation of the run, 10,000 AF of CVP water has been retained for delivery during the January – February period next year. This water will be used to both provide for a pre-irrigation run for farmers as well as for groundwater recharge. Should the winter be wet and demands commensurately

low, all of the water would be devoted to recharge operations. A portion of this recharge will be planned for the aforementioned basins providing benefits to the City.

Groundwater Level Changes:

The graph shown on Attachment C depicts recent changes in groundwater levels, comparing depth to water in the fall of 2006 with the fall of 2005. The general trend in Section 1, within which lies the City, is an upward gain of about 10 feet during that time period. Farther west in Sections 2 and 3, the data indicate that groundwater levels have risen 13 to 16 feet during the same time period. Differences among the sections is probably due to several factors, including movement of upstream recharge waters down-gradient over time, possible impacts of the pumping depression under the City, and confined aquifer v. unconfined aquifer readings as among the various well data collected.

City water supply well data for this same time period indicate a similar trend, showing an increase of about 6 feet. Such data, however, do not represent "static" levels but, rather, reflect water levels generally during drawdown conditions at the wells since the City well field is extracting water generally on a year-around basis.

Proposed Financial Contribution by City:

Based on earlier discussions held by the Committee, there was consensus that the City could be said to be on par with District water user pumpers if, on average, the City enabled an additional 9,000 to 10,000 AF of surface water to be recharged to the underground. Furthermore, the most immediate benefits to the City would be achieved if such recharge were conducted "up gradient" from the City's well field. Based on the District's unit cost (ranging from about $20 to $30 per AF) to import surplus water for diversion into the Kaweah basin, a cost reimbursement in the range of $200,000 to $300,000 was discussed by the Committee as justifiable in light of the average surface water quantities needed to achieve parity with adjacent District water user operations.

The consensus of the Committee was that a significant payment would be supportable this year given the wet rainfall/runoff conditions that developed and the potential for substantial groundwater recharge by the District. Given the sizable importation of 85,000 AF and the attendant ability of the District to accomplish significant gains in groundwater recharge (about 32,000 AF of which has been described as providing a direct benefit to the City), the District concludes that a payment in the order of $250,000 to be fully supportable by the accomplishments as summarized herein.

Attachments

Attachment A

City Groundwater Augmentation Program

Concept: City buys, through the District, imported CVP water targeted for recharge in existing basins that provide direct underground benefits to City

Basis for City Imported Water Purchases:

- Relative acreage – City v. District
  8,000/(8,000 + 63,000) = 11% 0.11 X 80,000 CVP avg. = 9,000 AF/yr
- Avg. surface water for District farmers (60%) as surrogate + share of remaining overdraft
  0.6 X 15,000 City pumping + 0.11 X 7,000 overdraft = 10,000 AF/yr
- Purchase quantity dictated by available capacity in existing basins and proximity to City perimeter

Recharge Locations:

- District basins – Creamline, Tagus, Abercrombie, Enterprise
- Shannon, Anderson Basins (via Farmers DC canal system)
- Possible program with County at Mooney Grove Park (fed by District canal)

Water Sources:

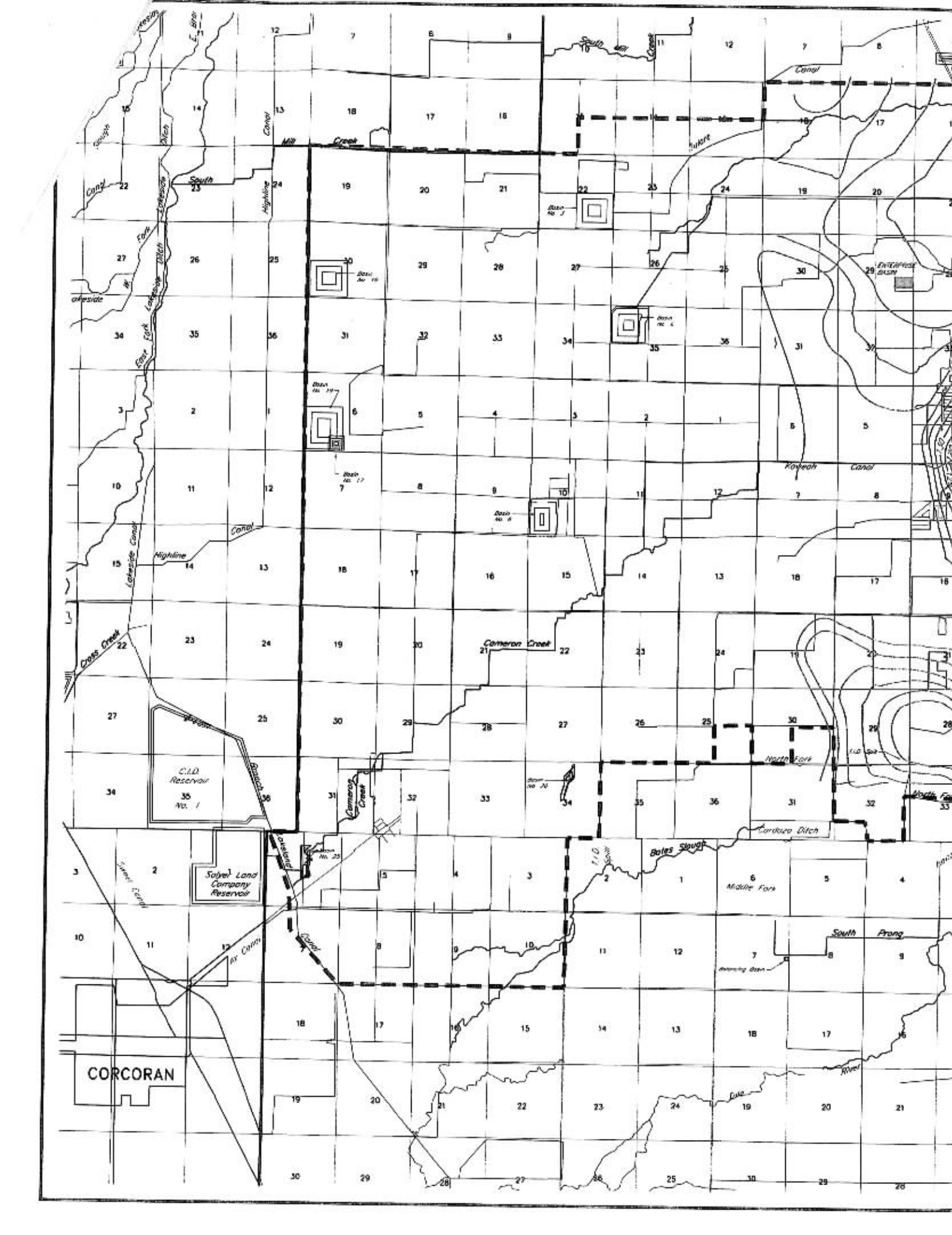
- CVP from TID Contract – Class 2 or Section 215, both of which are intended for recharge operations. Class 2 price currently at $26/AF; Section 215 price at $12 to $26/AF. Contract prices escalate over time.
- Kaweah River – May be times during which additional Kaweah water could be purchased to fill local basins.

Possible Fee Collection Mechanisms:

- Average annual – e.g., CVP Class 2 rate X fixed water quantity
- Variable based on District diversion devoted to recharge each year. Studies should demonstrate that amount collected is sufficient to cover avg. target amount.
- Fee collection begins at reasonable start-up level with full collection within 2 to 3 years

Fund Accounting:

- Separate District revolving fund, used only for additional Class 2/Sec. 215 water purchases for deliveries to targeted basins. Annual fund report to City, accompanied by operations report depicting benefits (e.g., amount recharged, estimated reduction in depth to groundwater, etc.)


CORCORAN
Cross Creek
Cameron Creek
Highline Canal
Lakeside Canal
East Fork Lakeside Ditch
Mill Creek
South Fork
Corduro Ditch
Bates Slough
Middle Fork
North Fork
South Prong
Kaweah River
Tulare
Solyel Land Company Reservoir
C.I.D. Reservoir No. 1

Attachment C

URBEMIS Output Files

12/10/2008 2:58:47 PM

Urbemis 2007 Version 9.2.4

Summary Report for Annual Emissions (Tons/Year)

File Name: V:\Clients\Tulare ID-1248\124808V1-Plum Basin_DOCUMENTS\CEQA\plum basin output files.urb924

Project Name: Plum Basin

Project Location: San Joaquin Valley APCD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5
2009 TOTALS (tons/year unmitigated)	0.09	0.70	0.77	0.04	0.81	0.16	0.03	0.19

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	PM10	PM2.5
TOTALS (tons/year, unmitigated)	0.00	0.00	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	PM10	PM2.5
TOTALS (tons/year, unmitigated)				

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	PM10	PM2.5
TOTALS (tons/year, unmitigated)	0.00	0.00	0.00	0.00

Attachment D

Cultural Records Letter

Center for Archaeological Research
California State University, Bakersfield
9001 Stockdale Highway, 24 DDH
Bakersfield, CA 93311

661-654-3297 office
661-654-2143 fax

October 7, 2008

Jenni Byers
Provost & Pritchard Engineering Group
1800 30th Street, Suite 280
Bakersfield, CA 93301-1918

Re: Record Search Results for the Tulare Irrigation District Project, Tulare County, California (CAR Project No. 09-22)

Dear Ms. Byers,

Per your request, a cultural resources records search (RS# 08-320; CAR Project No. 09-22) was conducted for the above-referenced project on September 30, 2008, at the Southern San Joaquin Valley Historical Resources Information Center at California State University, Bakersfield. The Project Area is located on approximately 170 acres in the NE ¼ of Section 29, T19S, R25E on the Visalia CA 7.5' and the Tulare, CA 7.5' USGS Topographic Quadrangle, northeast of the city of Tulare, Tulare County, California.

The results of the records search showed that no surveys have been performed on or adjacent to the Project Area. No archaeological or historical sites have been recorded within the Project Area. Two surveys have been performed within one-half mile radius of the Project Area (Benté *et. al*. 1995 and Wickstrom and Anderson 1997), but results were negative for archaeological or historical resources (see Figure 1). No archaeological or historical sites have been recorded within a one-half mile radius of the Project Area. Two surveys have been performed within one-half to one mile radius of the Project Area (Cantwell 1976 and Schmidt 2001). No archaeological or historical sites have been recorded within one-half to one mile radius of the Project Area.

The records search included an examination of the *National Register of Historic Places, the California Register of Historical Resources, California Points of Historical Interest, California Inventory of Historic Resources*, *California State Historic Landmarks Registry,* and the HRIC files of pertinent historical and archaeological data.

The Project Area has not been surveyed and as such, the possibility remains that resources do exist there and may be identifiable at this time. We recommend that the Project Area be surveyed by a qualified archaeologist.

The invoice for this records search will follow. If you have any further questions or concerns, please feel free to contact me at 661-654-6161 or by email at rorfila@csub.edu.

Sincerely,

Rebecca S. Orfila, M.A., RPA
Assistant Director

REFERENCES

Benté, Vance, Brian Hartoff, Barb Voss, Sharon Waechter, and Stephen Wee
1995 Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project. Report on file at the Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Cantwell, R. J.
1976 Archaeological Survey Report: New Tulare County Pest Control Facility, Road 140 and Ave. 256. Report on file at the Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Schmidt, James J.
2001 S.C.E. Tulare Deteriorated Pole Replacement Project: Phase I: Tulare County. Report on file at the Southern San Joaquin Valley Information Center, California State University, Bakersfield.

Wickstrom, Brian and Emily Anderson
1997 Cultural Resource Inventory for the Selma to Bakersfield Fiberoptic Line, Southern San Joaquin Valley, California. Report on file at the Southern San Joaquin Valley Information Center, California State University, Bakersfield.

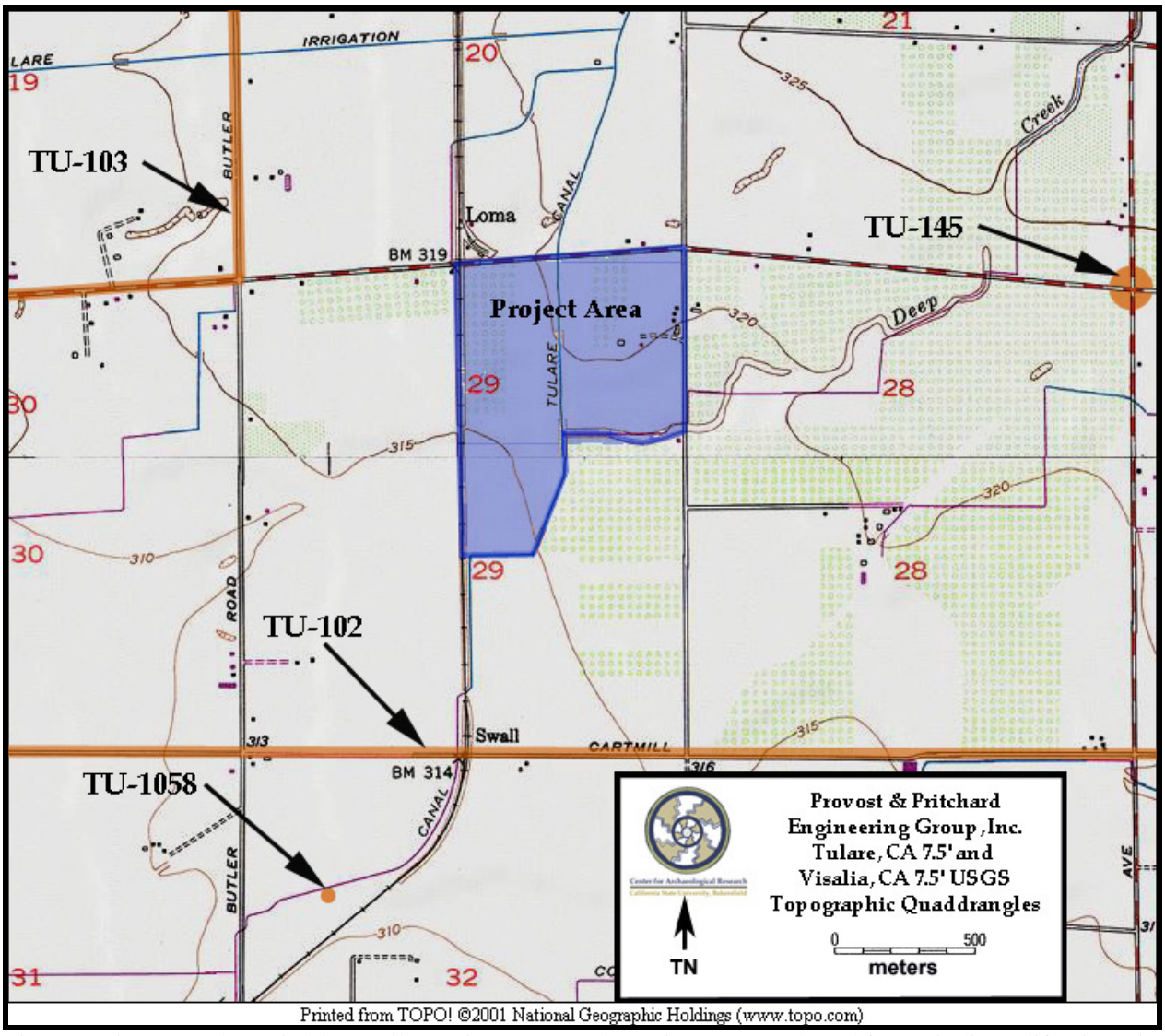


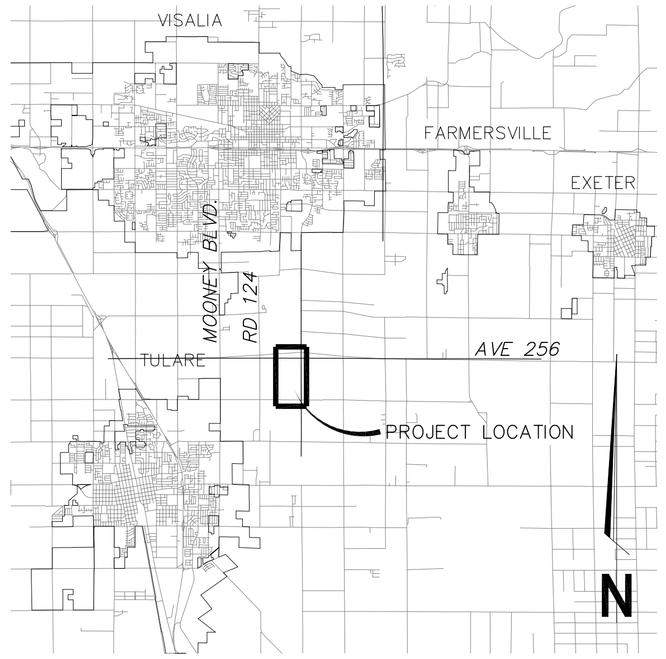
Fig. 1. Project Area shown in blue, while previous surveys shown in orange. Adapted from Visalia, California, 7.5' and Tulare, California, 7.5' USGS Topographic Quadrangle.

ATTACHMENT 3 – WORK PLAN

APPENDIX C

Final Construction Plans and Engineers Estimate of Probable Construction Cost, November 2009

Know what's below.
Call before you dig.



TULARE Co. MAP

GENERAL NOTES

1. Tulare Irrigation District (TID) (559-686-3425) shall be contacted at least 48 hours prior to commencement of work on or near existing District facilities.
2. Used material, rejects, misfits, or seconds, etc. are not acceptable for use on TID facilities.
3. All construction shall be in conformance with these plans, project specifications and TID specifications.
4. Contractor shall field verify the horizontal and vertical locations of all existing facilities prior to commencing work. Call Underground Service Alert (USA) at 811. Contractor shall make Engineer aware of any discrepancies.
5. All cast-in-place concrete structures shall be formed inside and out and concrete vibrated sufficiently to provide for smooth surfaced walls/floors without voids and honeycombs.
6. TID shall inspect all work phases on irrigation facilities for conformance to TID specifications. Reinforcing shall not be encased in concrete without prior TID inspections. Likewise, concrete shall not be covered with earth prior to TID inspection.
7. Concrete design mix shall be submitted to the engineer for review and approval. All concrete shall have a 28-day minimum compressive strength of 3000 psi unless otherwise specified.
8. All steel pipe and fittings shall be furnished with a shop applied high solids epoxy coating on the interior and exterior, unless otherwise indicated. All other exposed steel shall be painted with a pre-treatment primer, an undercoat and a final coat of paint in accordance with TID specifications.
9. All nuts, bolts, and washers used to secure underground fittings shall be stainless steel. After installation, all steel hardware shall be coated with a rust preventative, wrapped with 4 mil polyethylene sheeting, and secure with PVC tape.
10. Thrust restraints to be provided at all pipeline bends, whether or not shown on the plans.
11. All construction shall be performed in accordance with applicable health and safety laws of the State of California and CAL/OSHA standards.
12. Trench backfill and reservoir embankments shall be compacted in accordance with the specifications and the geotechnical report contained in the specifications.
13. Concrete vaults and boxes may be purchased from a precast manufacturer or Contractor may construct the structures if structural calculations and design is approved by TID and the Engineer.
16. All excess material and/or debris shall be removed upon completion of installation.
17. Contractor shall be responsible for providing adequate dust control at all times.
18. The contractor will be responsible for the repair of all damage to existing facilities which occur during construction of improvements affecting existing facilities.
19. Contractor agrees to assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property and that this requirement shall apply continuously and not be limited to normal working hours.
20. CAL-OSHA safety requirements shall be in effect during all construction. special safety precautions shall be taken when working in the vicinity of gas, oil, or electrical lines.
21. Contractor shall obtain all necessary County of Tulare encroachment permits prior to commencement of work.
22. Contractor shall be responsible for all traffic control.

BENCHMARKS

THE BENCHMARK IS NGS/CSRC STATION HPGN CA 06 09, PID GT2135.

THE MONUMENT IS AN ALUMINUM DISK STAMPED "HPGN-CALIF. STA.06-09 1991", LOCATED IN THE SOUTHEAST SECTION OF VISALIA, BETWEEN CALDWELL AVENUE AND AVENUE 272, AND ALONG SANTE FE RAILROAD ON THE NORTH SIDE OF A DRY RIVERBED. IT IS 60.4 FT WEST F, AND LEVEL WITH, THE CENTER OF SANTA FE STREET, 44.6 FE WEST-NORTHWEST OF THE NORTHWEST CORNER OF THE STREET BRIDGE ABUTMENT, AND 16.4 FT NORTHEAST OF THE NORTHEAST CORNER OF THE NORTHEAST RAILROAD BRIDGE ABUTMENT.

VERTICAL DATUM: NAVD 88 (NORTH AMERICAN VERTICAL DATUM OF 1988)

ELEVATION = 325.56'
(AS DETERMINED FROM COMBINING THE ELLIPSOIDAL HEIGHT AND GEOID HEIGHT AS PUBLISHED BY NGS)

EPOCH DATE: 2007.00

SITE CONTROL:

#1 SET BRASS DISK "SURVEY MARKER" IN TOP CONCRETE HEADWALL
NORTH SIDE OF CHECK STRUCTURE, WEST WALL

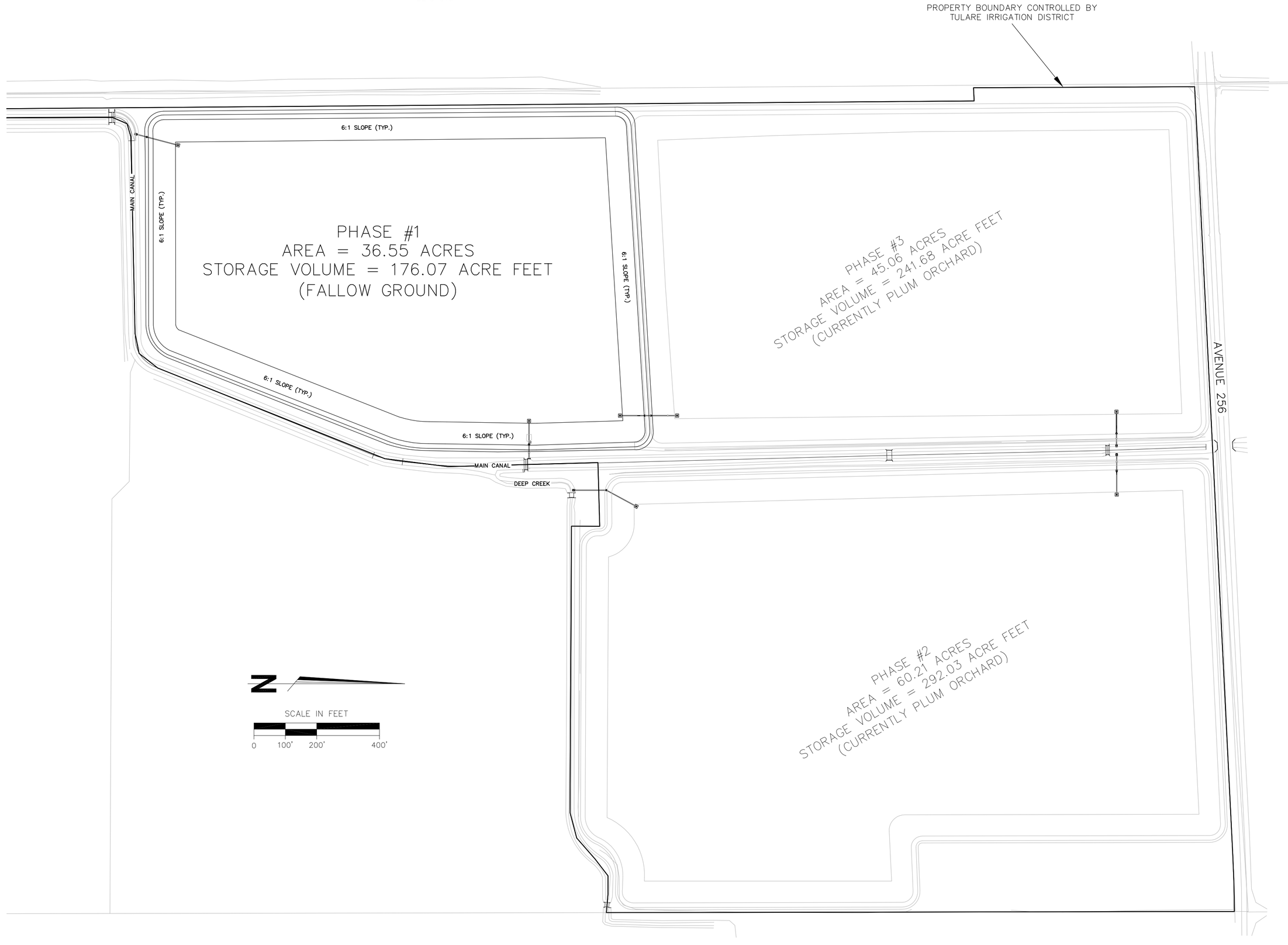
EL: 318.35

#2 SET BRASS DISK "SURVEY MARKER" IN TOP CONCRETE BRIDGE
EAST SIDE OF BRIDGE, NORTH WALL

EL: 318.54

NOTES:

THE TOPOGRAPHY SHOWN ON THIS MAP IS THE RESULT OF A FIELD SURVEY, AND IS REPRESENTATIVE OF THE GROUND CONDITIONS AT 12:00 PM (NOON), ON APRIL 7, 2008. DUE TO ONGOING EXCAVATION AND GRADING, THE CURRENT CONDITIONS MAY DIFFER FROM THOSE SHOWN HERE.



PRELIMINARY
NOT FOR CONSTRUCTION
01/05/09

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER
DENNIS R. MILLS
No. 67478
Exp. 6/30/09
STATE OF CALIFORNIA

DATE SIGNED

TULARE IRRIGATION DISTRICT

PLUM BASIN PROJECT
TULARE COUNTY, CA

COVER SHEET

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An Employee Owned Company
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VISALIA, CALIFORNIA 93291
559/636-1166 FAX 559/636-1177
www.ppeng.com

DESIGN ENGINEER:	DENNIS MILLS
LICENSE NO:	67,478
DRAFTED BY: JAB	CHECKED BY: DRM
SCALE:	AS SHOWN
DATE:	12/30/08
JOB NO:	124808V1
DWG. NO:	
SHEET	1 OF 9

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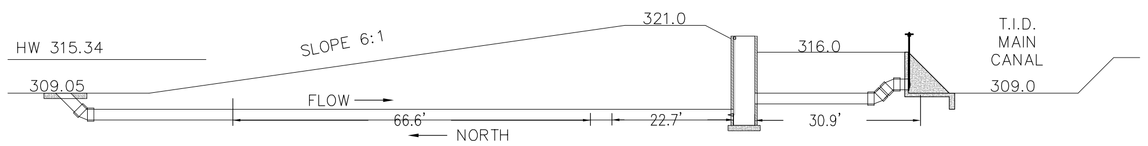
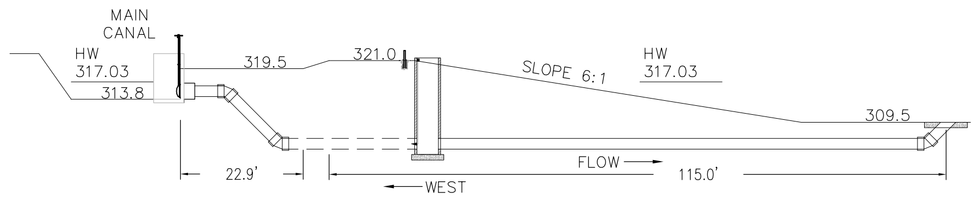


BASIN OUTLET STRUCTURE (A/2)



BASIN INLET STRUCTURE (B/2)

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Site Volume Table: Unadjusted

Site	Cut CY	Fill CY	Net CY	Method
Basin #1	266610	39374	227236 (C)	Composite

ABBREVIATIONS

BM	BENCHMARK
CP	CONTROL POINT
CY	CUBIC YARDS
DIA, ø	DIAMETER
EG	EXISTING GRADE
ELEV, EL	ELEVATION
EXIST, EX.	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
GB	GRADE BREAK
INV	INVERT
MIN	MINIMUM
PP	POWER POLE
S=	SLOPE
TYP	TYPICAL

LEGEND

- PROPERTY LINE
- SECTION LINE
- 123 — CONTOUR (MAJOR)
- CONTOUR (MINOR)
- FENCE (WIRE)
- PAVEMENT
- SWALE
- 24" — IRRIGATION
- UTILITY POLE
- GUY ANCHOR
- MAILBOX
- SIGN
- CONTROL POINT
- BENCHMARK
- # / SHT — DETAIL NUMBER / SHEET NUMBER
- 1987 BRASS DISC — EXISTING SURVEY POINT
- 000.00 FG — PROPOSED GRADE POINT

N

SCALE IN FEET
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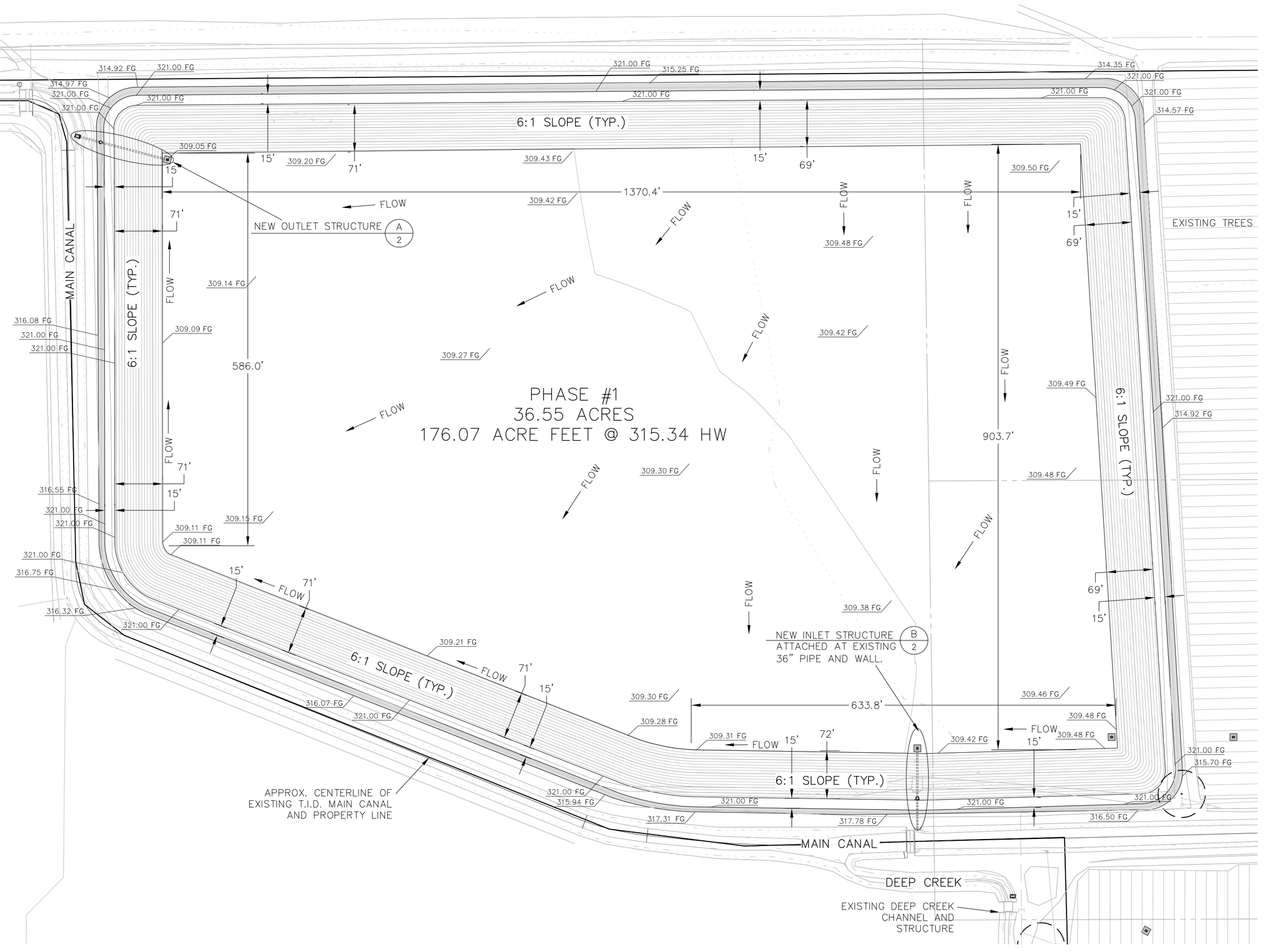

GRADING PLAN WITH EXISTING CONTOURS

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No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER DENNIS R. MILLS No. 67478 CIVIL STATE OF CALIFORNIA

DATE SIGNED

TULARE IRRIGATION DISTRICT

PLUM BASIN PROJECT
TULARE COUNTY, CA

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LICENSE NO: 67,478	
DRAFTED BY: JAB	CHECKED BY: DRM
SCALE: AS SHOWN	
DATE: 12/30/08	
JOB NO: 124808V1	
DWG. NO:	
SHEET 2 OF 9	

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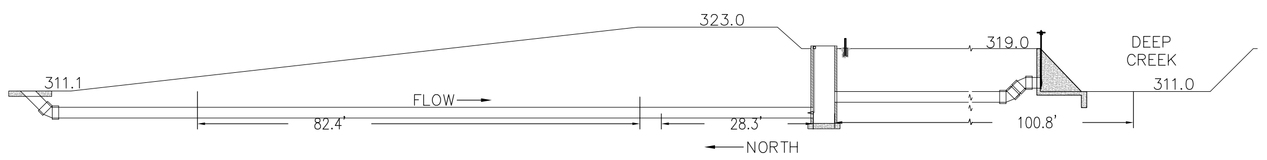
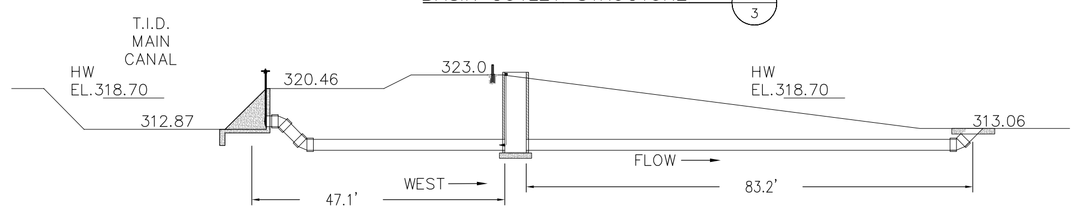


BASIN OUTLET STRUCTURE A/3



BASIN INLET STRUCTURE B/3

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ELEV, EL	ELEVATION
EXIST, EX.	EXISTING
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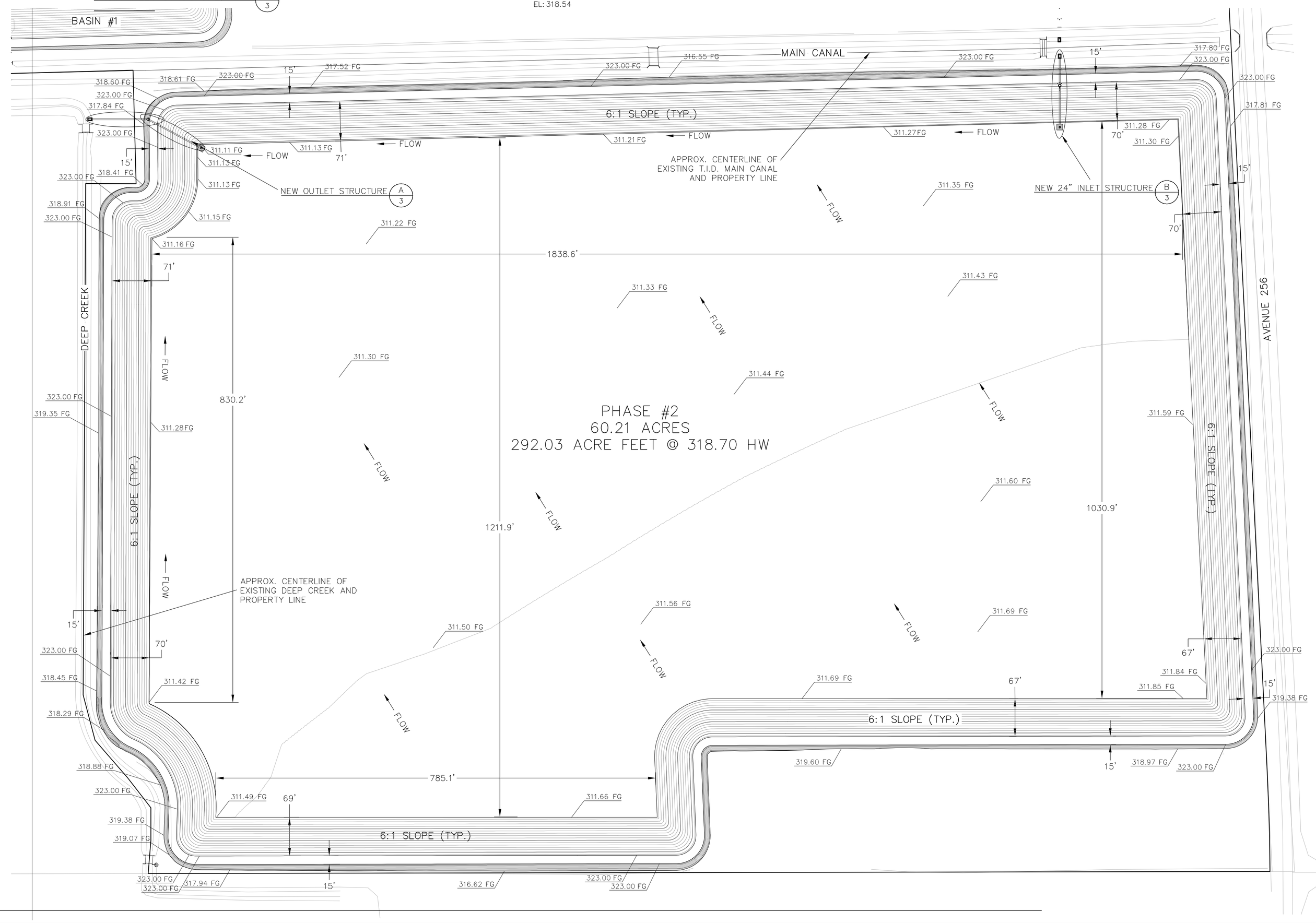

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SCALE IN FEET
0 50' 100' 200'

GRADING PLAN WITH EXISTING CONTOURS

PRELIMINARY
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01/05/09

No.	BY	REVISION	DATE

REGISTERED PROFESSIONAL ENGINEER DENNIS R. MILLS No. 67478 CIVIL STATE OF CALIFORNIA — DATE SIGNED

TULARE IRRIGATION DISTRICT
PLUM BASIN PROJECT
TULARE COUNTY, CA

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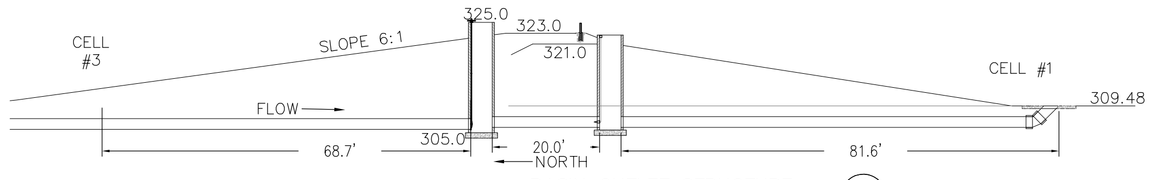
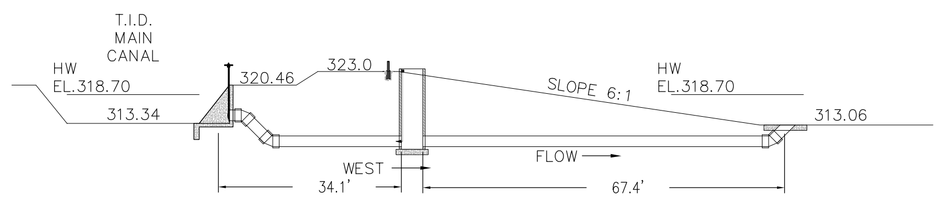
SHEET	3 OF 9

11/9/2009 4:13 PM V:\Clients\Tulare ID-1248\124808V1-Plum Basin\DWG\SHEET\DELIVERABLE SET\PHASE 2 GRADING PLAN.dwg --Nick Keller

Know what's below. Call before you dig.



BASIN OUTLET STRUCTURE (B/4)



BASIN INLET STRUCTURE (B/4)

ABBREVIATIONS

BM	BENCHMARK
CP	CONTROL POINT
CY	CUBIC YARDS
DIA, ø	DIAMETER
EG	EXISTING GRADE
ELEV, EL	ELEVATION
EXIST, EX.	EXISTING
FG	FINISHED GRADE
FL	FLOW LINE
GB	GRADE BREAK
INV	INVERT
MIN	MINIMUM
PP	POWER POLE
S=	SLOPE
TYP	TYPICAL

LEGEND

- PROPERTY LINE
- SECTION LINE
- 123 — CONTOUR (MAJOR)
- CONTOUR (MINOR)
- FENCE (WIRE)
- PAVEMENT
- SWALE
- 24" — IRRIGATION
- UTILITY POLE
- GUY ANCHOR
- MAILBOX
- SIGN
- CONTROL POINT
- BENCHMARK
- # / SHT — DETAIL NUMBER / SHEET NUMBER
- 587.89 / 2502 — EXISTING SURVEY POINT
- 000.00 FG — PROPOSED GRADE POINT

N

SCALE IN FEET
0 50' 100' 200'

BENCHMARKS

THE BENCHMARK IS NGS/CSRC STATION HPGN CA 06 09, PID GT2135.

THE MONUMENT IS AN ALUMINUM DISK STAMPED "HPGN-CALIF. STA.06-09 1991", LOCATED IN THE SOUTHEAST SECTION OF VISALIA, BETWEEN CALDWELL AVENUE AND AVENUE 272, AND ALONG SANTE FE RAILROAD ON THE NORTH SIDE OF A DRY RIVERBED. IT IS 60.4 FT WEST F, AND LEVEL WITH, THE CENTER OF SANTA FE STREET, 44.6 FE WEST-NORTHWEST OF THE NORTHWEST CORNER OF THE STREET BRIDGE ABUTMENT, AND 16.4 FT NORTHEAST OF THE NORTHEAST CORNER OF THE NORTHEAST RAILROAD BRIDGE ABUTMENT.

VERTICAL DATUM: NAVD 88 (NORTH AMERICAN VERTICAL DATUM OF 1988)

ELEVATION = 325.56'
(AS DETERMINED FROM COMBINING THE ELLIPSOIDAL HEIGHT AND GEOID HEIGHT AS PUBLISHED BY NGS)

EPOCH DATE: 2007.00

SITE CONTROL:

#1 SET BRASS DISK "SURVEY MARKER" IN TOP CONCRETE HEADWALL
NORTH SIDE OF CHECK STRUCTURE, WEST WALL

EL: 318.35

#2 SET BRASS DISK "SURVEY MARKER" IN TOP CONCRETE BRIDGE
EAST SIDE OF BRIDGE, NORTH WALL

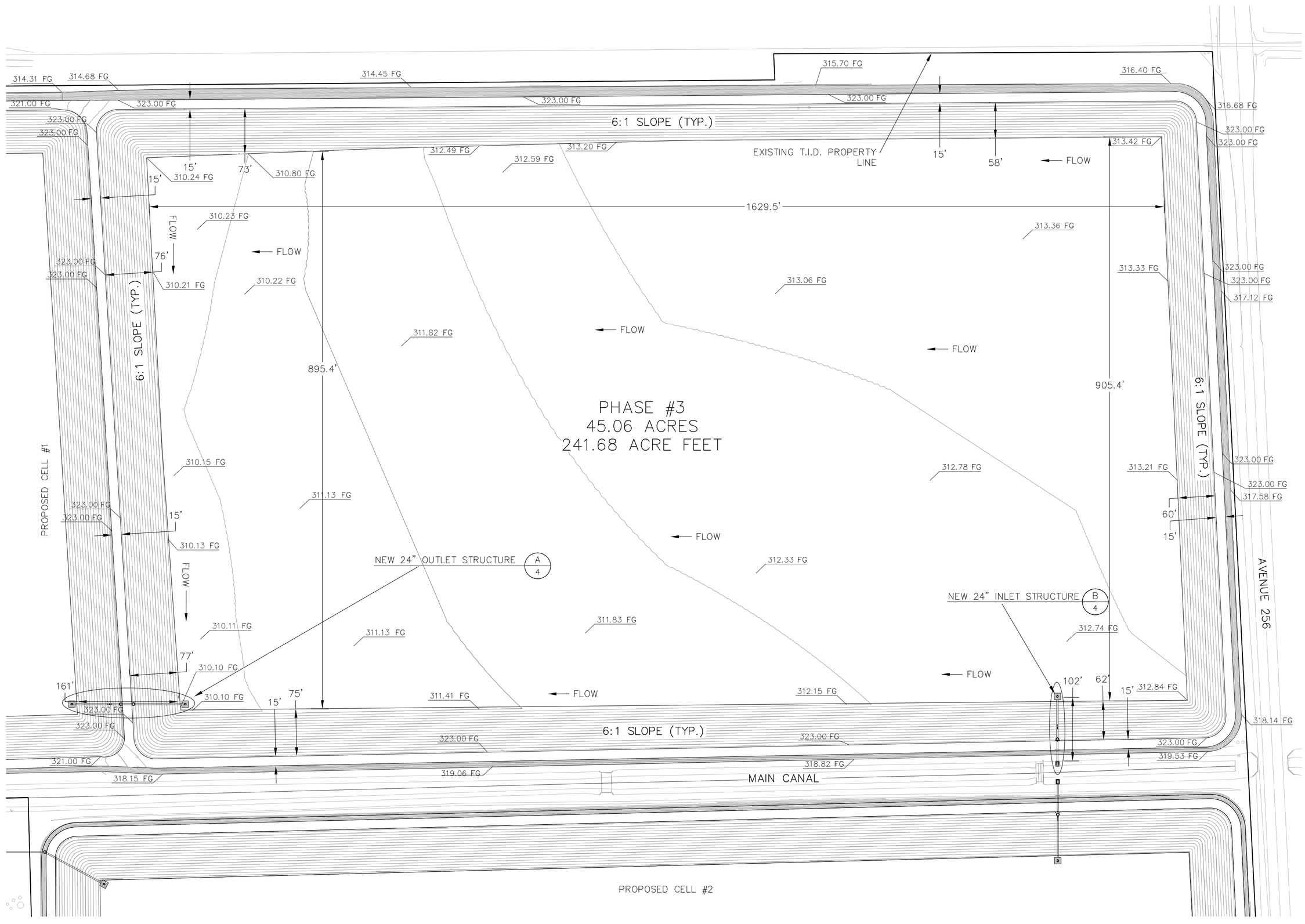
EL: 318.54

NOTES:

THE TOPOGRAPHY SHOWN ON THIS MAP IS THE RESULT OF A FIELD SURVEY, AND IS REPRESENTATIVE OF THE GROUND CONDITIONS AT 12:00 PM (NOON), ON APRIL 7, 2008. DUE TO ONGOING EXCAVATION AND GRADING, THE CURRENT CONDITIONS MAY DIFFER FROM THOSE SHOWN HERE.

Site Volume Table: Unadjusted

Site	Cut CY	Fill CY	Net CY
Basin #3	210490	54917	155573 (C) Composite



GRADING PLAN WITH EXISTING CONTOURS

PRELIMINARY
NOT FOR CONSTRUCTION
01/05/09

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER DENNIS R. MILLS No. 67478 CIVIL STATE OF CALIFORNIA

DATE SIGNED

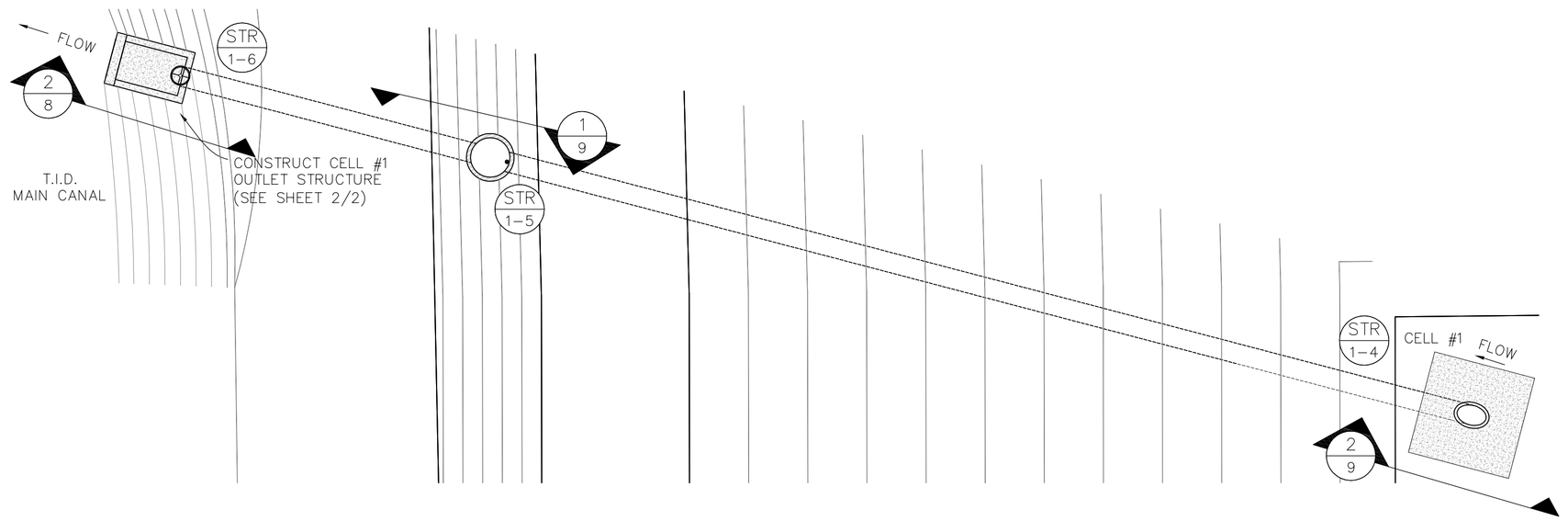
TULARE IRRIGATION DISTRICT
PLUM BASIN PROJECT
TULARE COUNTY, CA

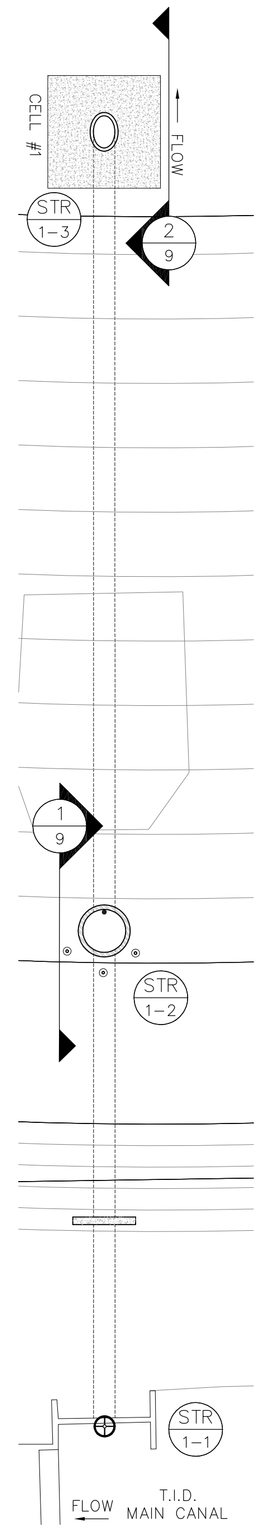
PHASE 3 GRADING PLAN

ESTD. 1968 PROVOST & PRITCHARD ENGINEERING GROUP, INC.
An Employee Owned Company
CERTIFIED
1234 W. CHURCH STREET
VISALIA, CALIFORNIA 93291
559/636-1166 FAX 559/636-1177
www.ppeng.com

DESIGN ENGINEER: DENNIS MILLS	
LICENSE NO: 67,478	
DRAFTED BY: JAB	CHECKED BY: DRM
SCALE: AS SHOWN	
DATE: 12/30/08	
JOB NO: 124808V1	
DWG. NO:	
SHEET 4 OF 9	

11/9/2009 4:14 PM V:\Clients\Tulare ID-1248\124808V1-Plum Basin\DWG\SHEET\DELIVERABLE SET\PHASE 3 GRADING PLAN.dwg -Nick Keller





CONSTRUCTION NOTES:

1. CONTRACTOR RESPONSIBLE FOR ALL CLEARING AND GRUBBING.
2. ALL BURIED PIPE, WITH THE EXCEPTION OF THE RCB OVERFLOW STRUCTURE, TO BE GALVANIZED CORRUGATED METAL PIPE AND MEET ASTM A760/A760M–06 STANDARDS.
3. ALL CORRUGATED METAL PIPE SHALL BE JOINED WITH STANDARD ANNULAR COUPLERS WITH SLEEVE GASKETS OR SEMI–CORRUGATED COUPLERS WITH O–RING GASKETS. ALL COUPLERS SHALL BE SECURED WITH BAND ANGLE CONNECTORS.
4. CUTTING OF EXISTING CONCRETE SHALL BE DONE WITH CONCRETE SAW WHERE PRACTICAL. CONCRETE CUTTING SHALL BE DONE IN A WAY THAT DOES NOT DAMAGE THE INTEGRITY OF THE PORTION OF THE STRUCTURE WHICH IS TO REMAIN. ANY EXPOSED REBAR SHALL BE DRILLED BACK ONE INCH AND THE DRILL HOLE SHALL BE FILLED WITH EPOXY GROUT.
5. IF POSSIBLE, NATIVE MATERIAL THAT IS RELATIVELY SAND FREE SHALL BE USED FOR THE RECOMPACTION MATERIAL. FILL MATERIAL SHALL BE FREE OF TRASH, ORGANIC MATERIALS AND OTHER DEBRIS.
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7. ALL EXCAVATED TRENCHES SHALL BE OVER EXCAVATED TWELVE INCHES (12") AND RECOMPACTED TO A RELATIVE DENSITY OF NINETY–FIVE PERCENT (95%) AS VERIFIED BY NUCLEAR GAUGE TESTING.
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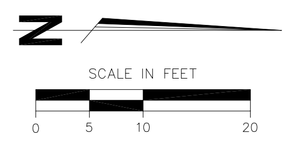

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TULARE IRRIGATION DISTRICT

PLUM BASIN PROJECT
TULARE COUNTY, CA

PHASE 1 STRUCTURE PLAN VIEW

EST. 1965
PROVOST& PRITCHARD
ENGINEERING GROUP
An Employee Owned Company
130 NORTH GARDEN STREET
VISALIA, CALIFORNIA 93291
559/636-1166 FAX 559/636-1177
www.ppeng.com

DESIGN ENGINEER: DENNIS MILLS	
LICENSE NO: 67,478	
DRAFTED BY: JAB	CHECKED BY: DRM
SCALE: AS SHOWN	
DATE: 12/30/08	
JOB NO: 124808V1	
DWG. NO:	
SHEET 5 OF 9	

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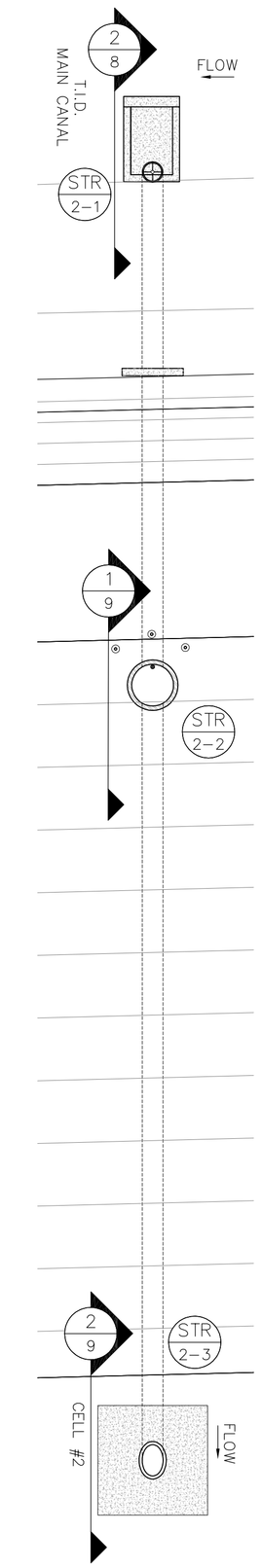

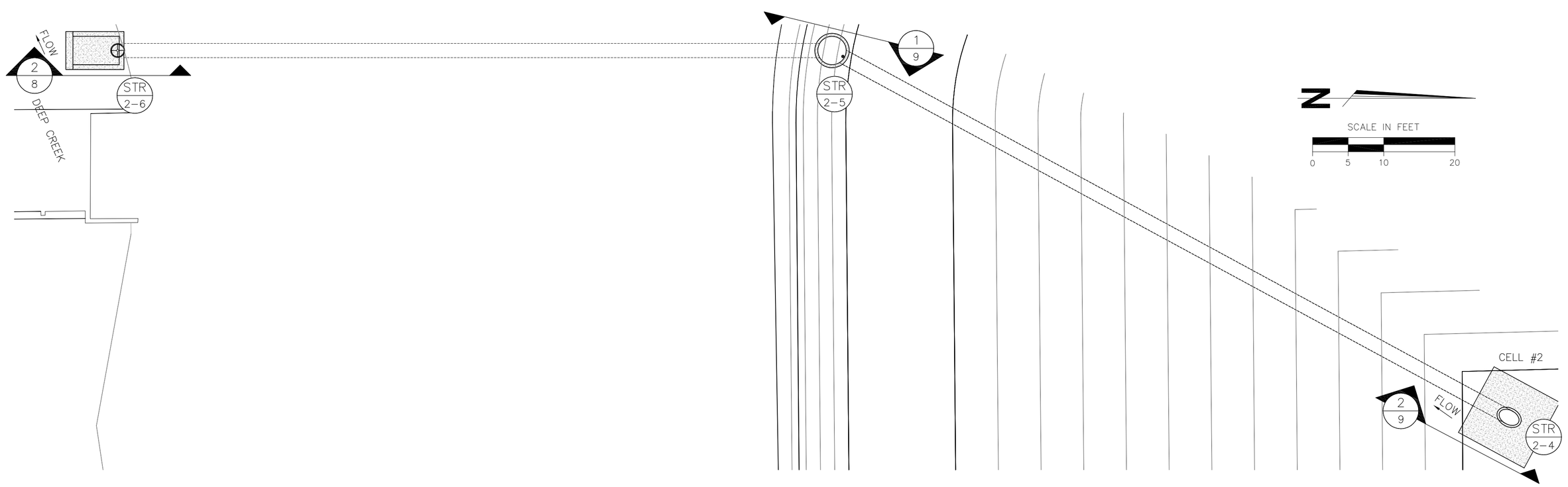

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No.	REVISION	BY	DATE

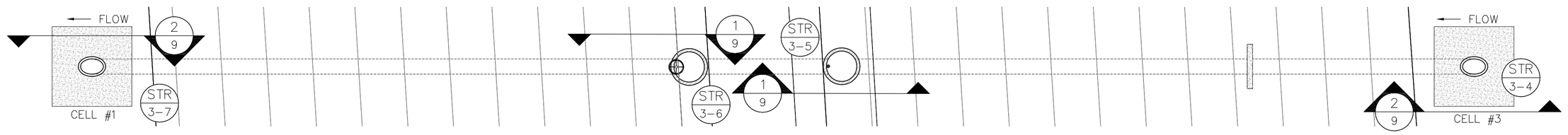
TULARE IRRIGATION DISTRICT

PLUM BASIN PROJECT
TULARE COUNTY, CA

PHASE 2 STRUCTURE PLAN VIEW

EST. 1968
PROVOST & PRITCHARD
ENGINEERING GROUP
An Employee Owned Company
130 NORTH GARDEN STREET
VISALIA, CALIFORNIA 93291
559/636–1166 FAX 559/636–1177
www.ppeng.com

DESIGN ENGINEER:	DENNIS MILLS
LICENSE NO:	67,478
DRAFTED BY:	JAB
CHECKED BY:	DRM
SCALE:	AS SHOWN
DATE:	12/30/08
JOB NO:	124808V1
DWG. NO:	
SHEET	6 OF 9



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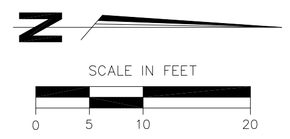

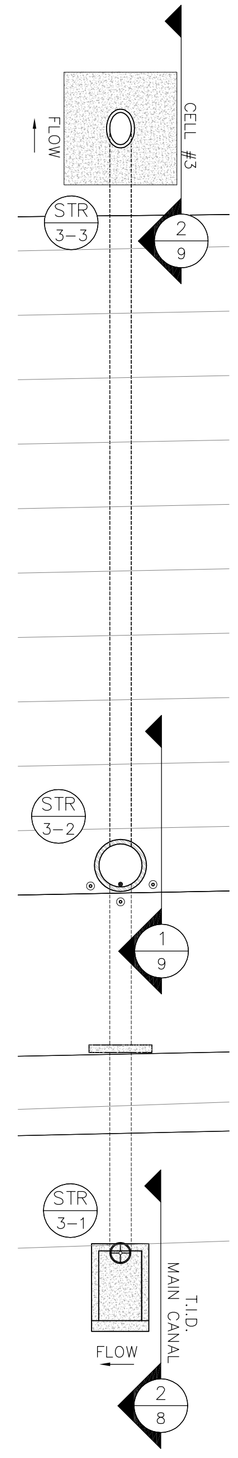

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TULARE IRRIGATION DISTRICT

PLUM BASIN PROJECT
TULARE COUNTY, CA

PHASE 3 STRUCTURE PLAN VIEW

EST. 1968
PROVOST & PRITCHARD
ENGINEERING GROUP
An Employee Owned Company
130 NORTH GARDEN STREET
VISALIA, CALIFORNIA 93291
559/636-1166 FAX 636-1177
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DESIGN ENGINEER: DENNIS MILLS
LICENSE NO: 67,478
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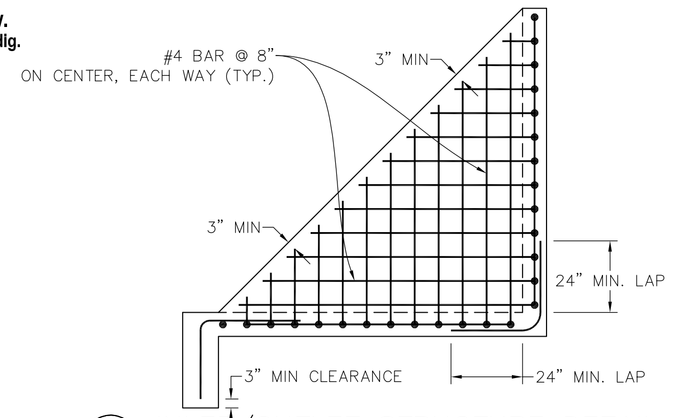
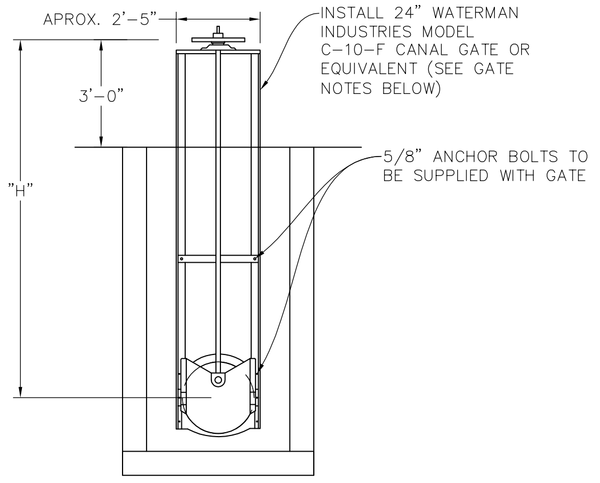
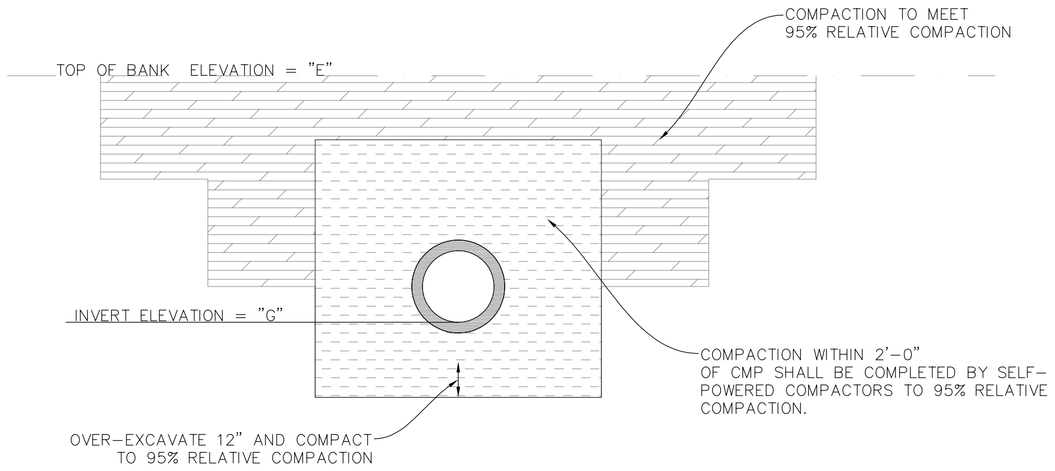
SHEET 7 OF 9



3/8 INLET/OUTLET STRUCTURE DETAIL
SCALE: NTS



INLET CONTROL STRUCTURE GATE DETAILS



5/8 TRENCH COMPACTION DETAIL
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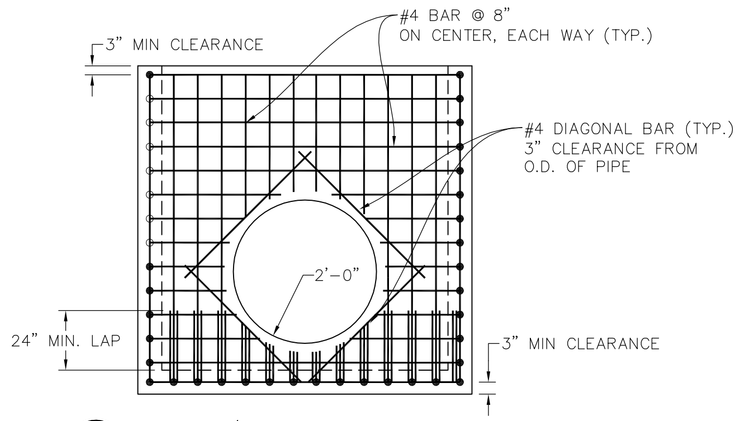

4/8 INLET/OUTLET STRUCTURE DETAIL
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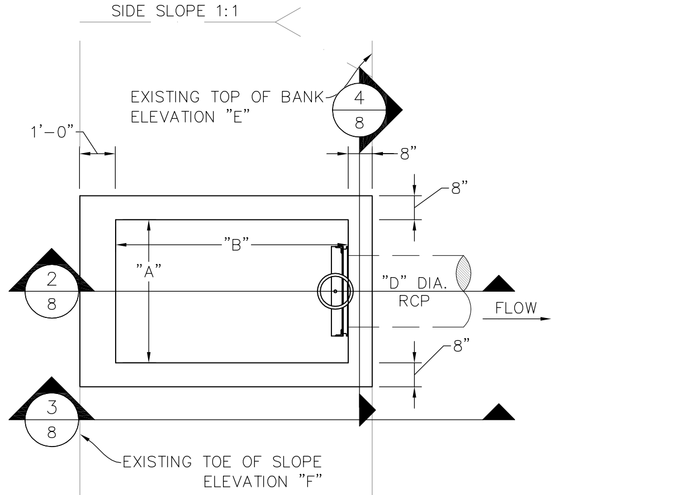


1/8 INLET/OUTLET STRUCTURE PLAN VIEW
SCALE: 1"=3'

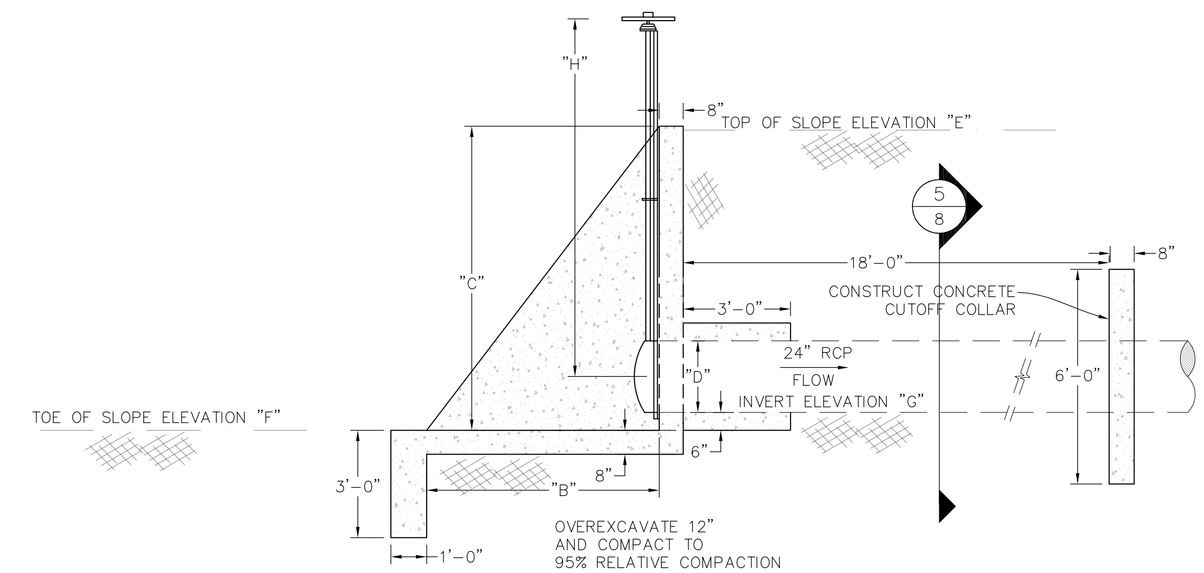
C-10-F CANAL GATE NOTES:

ALL INSTALLED GATES MUST BE 24" DIA. WATERMAN INDUSTRIES MODEL C-10-F CANAL GATES OR AN APPROVED EQUIVALENT, MEETING THE FOLLOWING SPECIFICATIONS:

1. PRESSURE RATING: GATE SIZE 24", MAXIMUM SEATING = 10' (4.0 PSI)
2. FRAME ANGLES = GALVANIZED STEEL
3. BRONZE SEATING SURFACE
4. RISING STEM EXTENSIONS
5. STAINLESS STEEL STEM AND FASTENERS
6. FLAT BACK FOR HEADWALL MOUNTING
7. 9'-0" GATE FRAME HEIGHT FROM CENTERLINE OF ORIFICE
8. ANCHOR BOLTS: (4) 5/8" DIA. THE CONTRACTOR SHALL INSTALL A NEW SEATING COLLAR IF NECESSARY TO ENSURE A WATER TIGHT SEAL. ALL MOUNTING BOLTS SHALL BE STAINLESS STEEL, EPOXIED IN PLACE (HILTI HVA, "ANCHOR-IT" EPOXY ADHESIVE OR APPROVED EQUIVALENT). EXPANSION OR WEDGE ANCHORS WILL NOT BE PERMITTED
9. LIFT TYPE: HANDWHEEL DIAMETER: 12"; STEM DIAMETER: 1".

CONCRETE NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS (1 WORKING DAY) PRIOR TO CONCRETE PLACEMENT.
2. CONCRETE USED IN THE NEW STRUCTURE SHALL BE PORTLAND CEMENT TYPE II. CONCRETE MIX DESIGN SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3,000 PSI, A MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE, A MAXIMUM WATER\CEMENT RATIO OF 0.50, AIR ENTRAINMENT OF 3%-5%, A MAXIMUM COARSE AGGREGATE OF 1", A MAXIMUM SLUMP OF 3" HORIZONTAL SURFACES AND A MAXIMUM SLUMP OF 4" FOR VERTICAL WALLS.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 STEEL BARS FOR CONCRETE REINFORCEMENT, INTERMEDIATE GRADE, AND SHALL HAVE DEFORMATIONS CONFORMING TO ASTM A615. REINFORCING STEEL SHALL BE CLEANED OF HEAVY FLAKY RUST, LOOSE MILL SCALE, DIRT, GREASE, AND OTHER FOREIGN SUBSTANCES PRIOR TO PLACEMENT. WIRE USED FOR TYING REINFORCEMENT IN PLACE SHALL BE NO.18 AWG BLACK ANNEALED OR HEAVIER.
4. #4 BARS AT 8" ON CENTER, EACH WAY ARE REQUIRED IN ALL WALLS AND FLOORS OF THE NEW STRUCTURES. REINFORCING SHALL BE LAPPED 24" IN BOTH DIRECTIONS FROM WALLS TO FLOOR AND WALLS TO WALLS.
5. THE FORM WORK AND REINFORCING STEEL PLACEMENT SHALL BE APPROVED BY THE ENGINEER PRIOR TO ORDERING CONCRETE. ALL FORMS SHALL BE CLEANED AND AN APPROVED AGENT APPLIED EACH TIME THEY ARE USED AND SHALL BE SO CONSTRUCTED AND SET AS TO RESIST, WITHOUT SPRINGING OR SETTLEMENT, THE PRESSURE OF THE CONCRETE AND THE PLACING OPERATIONS. IN DESIGNING FORMS AND FALSEWORK, THE CONCRETE SHALL BE TREATED AS A LIQUID WEIGHING AT LEAST 150 LBS. PER CUBIC FOOT FOR VERTICAL LOADS AND NOT LESS THAN 85 LBS. PER CUBIC FOOT FOR HORIZONTAL PRESSURE. THE DESIGN OF THE FORMS AND FALSEWORK SYSTEM SHALL INCLUDE ALLOWANCES FOR TEMPORARY CONSTRUCTION LOADS. THE RATE OF PLACEMENT OF CONCRETE SHALL BE SO REGULATED THAT THE PRESSURES CAUSED BY THE WET CONCRETE WILL NOT EXCEED THE DESIGNED FORM PRESSURE. THE UNSUPPORTED LENGTH OF WOODEN COLUMNS AND COMPRESSION MEMBERS SHALL NOT EXCEED 30 TIMES THE WIDTH OF THE LEAST SIDE.
6. ALL FORMS SHALL BE SET AND MAINTAINED IN TRUE ALIGNMENT, GRADE AND SECTION UNTIL THE CONCRETE HAS SUFFICIENTLY SET. THE INTERIOR SURFACES OF FORMS SHALL BE ADEQUATELY TREATED WITH AN ACCEPTABLE MATERIAL TO INSURE NON ADHESION OF MORTAR. ALL FORMS SHALL BE MORTAR TIGHT. WHEN FORMS APPEAR TO BE UNSATISFACTORY IN ANY WAY, CONCRETE PLACEMENT SHALL BE STOPPED UNTIL THE DEFECTS HAVE BEEN CORRECTED. METAL TIE RODS OR ANCHORAGES WITHIN THE FORMS SHALL BE FITTED WITH SUITABLE CONES OR COMPARABLE DEVICES. METAL TIE RODS OR ANCHORAGES SHALL BE REMOVED TO A DEPTH OF 1" FROM THE SURFACE WITHOUT INJURY TO THE CONCRETE. ALL FITTINGS FOR METAL TIES SHALL BE OF SUCH DESIGN THAT UPON THEIR REMOVAL, THE CAVITIES WHICH ARE LEFT WILL BE OF THE SMALLEST POSSIBLE SIZE, BUT OF SUFFICIENT DIAMETER TO ALLOW THE CAVITY TO BE "DRY PACKED" WITH CEMENT MORTAR. THE CAVITIES SHALL BE FILLED WITH CEMENT MORTAR AND THE SURFACE LEFT SOUND, SMOOTH AND EVEN. ANY FORM RELEASE AGENT USED SHALL BE APPLIED TO THE FORM SO THAT NO AGENT COMES IN CONTACT WITH REINFORCING STEEL. FORM WORK SHALL REMAIN IN PLACE FOR A MINIMUM OF 7 DAYS AFTER PLACEMENT.
7. ALL CONCRETE SHALL BE PLACED BEFORE IT HAS TAKEN ITS INITIAL SET AND SHALL BE PLACED IN HORIZONTAL LAYERS AND IN SUCH A MANNER AS TO AVOID SEGREGATION. THE CONCRETE ADJACENT TO THE FORMS AND JOINTS SHALL BE THOROUGHLY INTERNAL CONSOLIDATED WITH A VIBRATOR OPERATING AT NOT LESS THAN 4,500 VIBRATIONS PER MINUTE. PUMPING EQUIPMENT SHALL BE OF SUITABLE TYPE, WITHOUT Y SECTIONS, AND WITH ADEQUATE PUMPING CAPACITY. LOSS OF SLUMP IN PUMPING SHOULD NOT EXCEED 11/2 ". CONCRETE SHALL NOT BE PLACED THROUGH REINFORCING THAT MAY CAUSE SEPARATION OF AGGREGATES.
8. THE CONCRETE SHALL BE DEPOSITED AS NEARLY AS POSSIBLE IN ITS FINAL POSITION. DROP CHUTES AND ELEPHANT TRUNKS SHALL BE USED ON DROPS GREATER THAN 5 FEET. CONCRETE SHALL BE PLACED AT SUCH A RATE THAT ALL CONCRETE IN THE SAME LIFT WILL BE DEPOSITED ON PLASTIC CONCRETE. THE CONCRETE COMPRISING EACH UNIT OF WORK SHALL BE PLACED IN A CONTINUOUS LIFT.



2/8 INLET STRUCTURE PROFILE VIEW
SCALE: 1"=3'

CONSTRUCTION NOTES:

STRUCTURE EXCAVATION AND BACKFILL SHALL CONFORM TO SECTION 19-3 OF THE STATE STANDARD SPECIFICATIONS. BACKFILL MAY BE OF NATIVE MATERIAL THAT IS FREE OF LARGE STONES OR DEBRIS.

BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS OF NO MORE THAN EIGHT INCHES. THERE SHOULD BE AT LEAST 1 FOOT OF COVER OVER ANY PIPE UNTIL A 3 FOOT COVER OF PROPERLY COMPACTED MATERIAL IS PLACED OVER THE PIPE. BACKFILL SHALL BE MOISTURE CONDITIONED TO WITHIN 2 PERCENT OF OPTIMUM MOISTURE CONTENT AND COMPACTED TO ACHIEVE THE REQUIRED MINIMUM RELATIVE COMPACTION.

STRUCTURE DIMENSION TABLE

STR. NO.	A	B	C	D	E	F	G	H	I	J	K
1-1	-	-	-	36"			24"	10.3'			
1-2	4'	18'	-	24"	321.0	303.5	-	-	24"	15.5'	304.5
1-3	10.5'	0.5'	3.0'	24"	309.5	-	-	-	-	-	304.5
1-4	10.5'	0.5'	3.0'	24"	309.1	-	-	-	-	-	304.1
1-5	4'	16.6'	-	24"	316.0	301.5	-	-	24"	14.0'	304.1
1-6	4'	7.6'	7.6'	24"	316.0	309.0	24"	8.5'	-	-	309.5
2-1	4'	7.7'	7.7'	24"	320.5	312.9	24"	9.1'	-	-	313.4
2-2	4'	15.0'	-	24"	323.0	307.1	-	-	24"	13.5'	308.1
2-3	10.5'	0.5'	3.0'	24"	313.1	-	-	-	-	-	308.1
2-4	10.5'	0.5'	3.0'	24"	311.1	-	-	-	-	-	306.1
2-5	4'	14.4'	-	24"	319.0	305.6	-	-	24"	12.0'	306.1
2-6	4'	7.6'	7.6'	24"	319.0	311.0	24"	10.5'	-	-	311.5
3-1	4'	5.6'	7.1'	24"	320.5	313.3	24"	9.6'	-	-	313.8
3-2	4'	15.0'	-	24"	323.0	308.5	-	-	24"	12.5'	309.0
3-3	10.5'	0.5'	3.0'	24"	313.1	-	-	-	-	-	308.1
3-4	10.5'	.05'	3.0'	24"	310.1	-	-	-	-	-	305.1
3-5	4'	20.5'	-	24"	323.0	304.5	24"	19.0'	-	-	305.5
3-6	4'	17.7'	-	24"	323.0	305.3	-	-	24"	15.7'	306.3
3-7	10.5'	.05'	3.0'	24"	309.5	-	-	-	-	-	304.5

PRELIMINARY
NOT FOR CONSTRUCTION
01/05/09

No.	REVISION	BY	DATE

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TULARE IRRIGATION DISTRICT
PLUM BASIN PROJECT
TULARE COUNTY, CA

STRUCTURE DETAILS

EST. 1963 PROVOST& PRITCHARD ENGINEERING GROUP, INC.
An Employee Owned Company
130 N. GARDEN STREET
VISALIA, CALIFORNIA 93291
559/636-1166 FAX 559/636-1177
www.ppeng.com

DESIGN ENGINEER: DENNIS MILLS
LICENSE NO: 67,478
DRAFTED BY: JAB | CHECKED BY: DRM
SCALE: AS SHOWN
DATE: 12/30/08
JOB NO: 124808V1
DWG. NO:
SHEET 8 OF 9

TULARE IRRIGATION DISTRICT

PLUM BASIN PROJECT
TULARE COUNTY, CA

METER STAND DETAILS

PROVOST&PRITCHARD ENGINEERING GROUP
An Employee Owned Company
EST. 1985
130 N. GARDEN STREET
VISALIA, CALIFORNIA 93291
559-636-1166 FAX 559-636-1177
www.ppeng.com

DESIGN ENGINEER: DENNIS MILLS
LICENSE NO: 67,478

DRAFTED BY:	CHECKED BY:
JAB	DRM

SCALE: AS SHOWN
DATE: 12/30/08
JOB NO: 124806V1
DWG. NO:
SHEET 9 OF 9

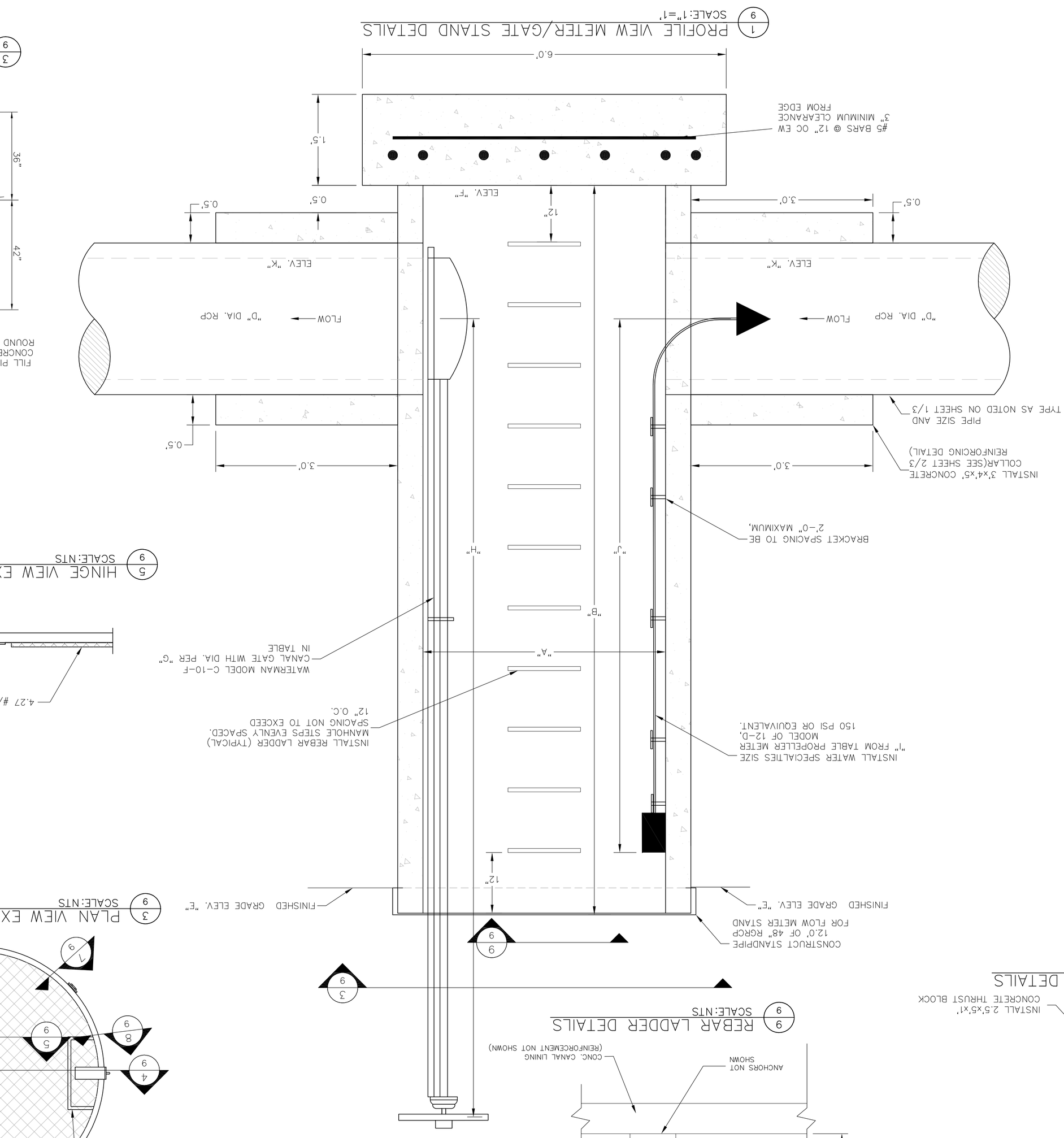
REGISTERED PROFESSIONAL ENGINEER DENNIS R. MILLS No. 67,478 CIVIL EXPIRES: 6/30/09 STATE OF CALIFORNIA

DATE SIGNED: _____

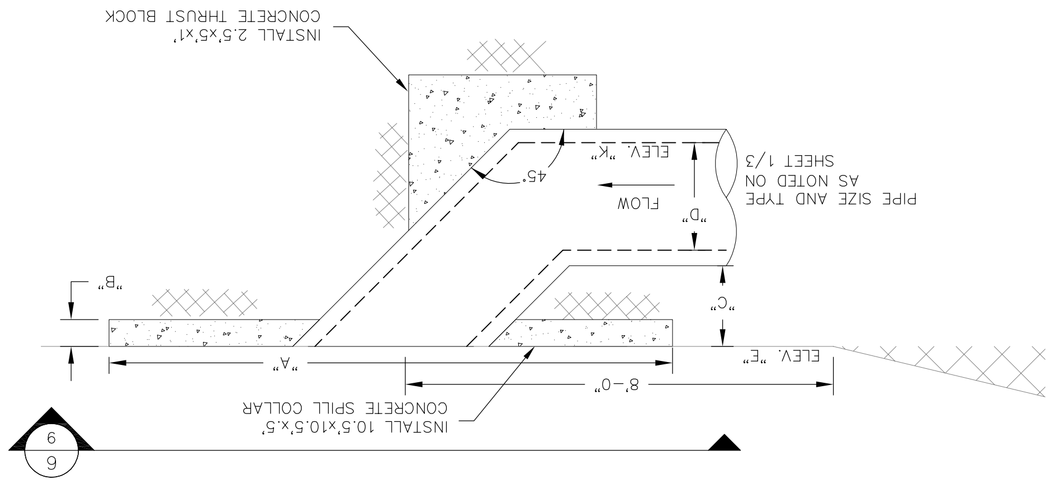
NO.	REVISION	BY	DATE

PRELIMINARY
NOT FOR CONSTRUCTION
01/05/09

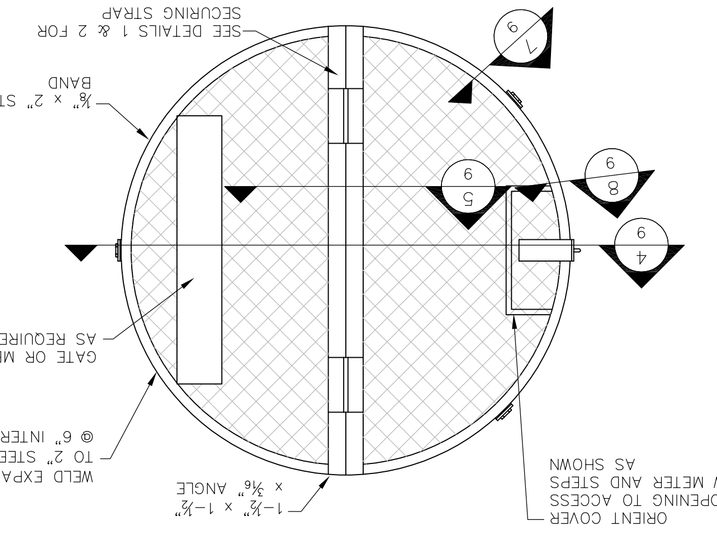
1 / 9 PROFILE VIEW METER/GATE STAND DETAILS
SCALE: 1"=1'



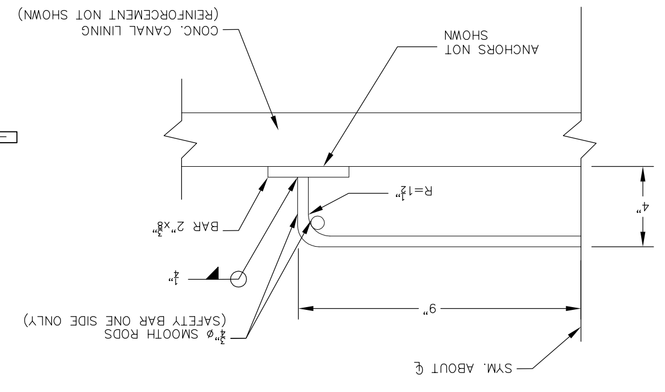
2 / 9 PROFILE VIEW DISCHARGE DETAILS
SCALE: NTS



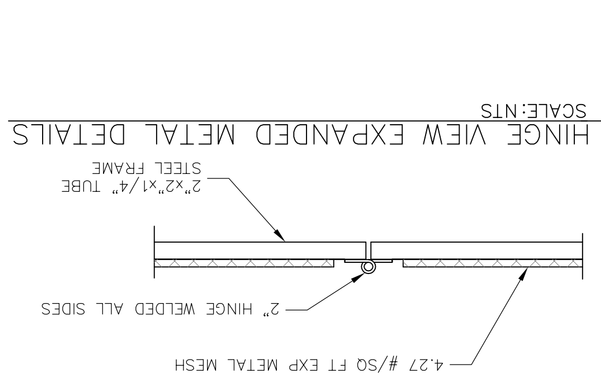
3 / 9 PLAN VIEW EXPANDED METAL DETAILS
SCALE: NTS



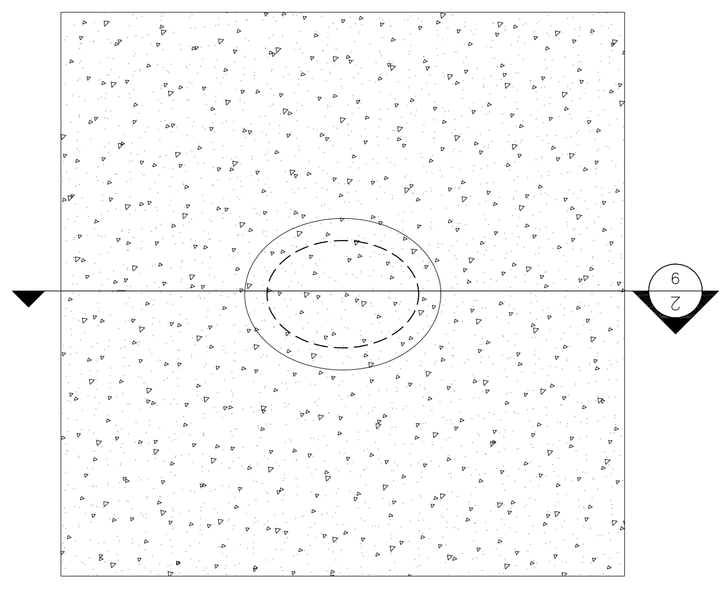
4 / 9 REBAR LADDER DETAILS
SCALE: NTS



5 / 9 HINGE VIEW EXPANDED METAL DETAILS
SCALE: NTS



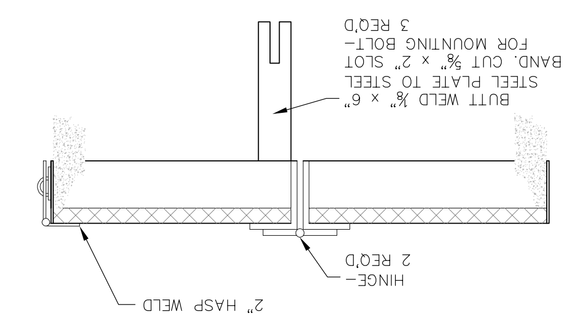
6 / 9 INLET PIPE PAD DETAILS
SCALE: 1"=2'



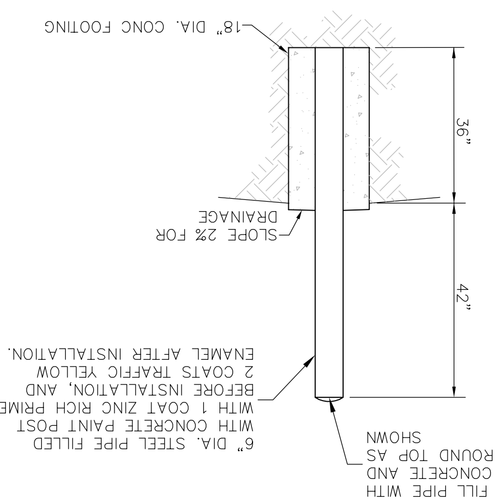
7 / 9 ANCHOR DETAILS
SCALE: NTS

8 / 9 HASP DETAILS
SCALE: NTS

9 / 9 HASP VIEW EXPANDED METAL DETAILS
SCALE: NTS



3 / 9 BOLLARD DETAILS
SCALE: NTS



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